JANUARY, 1955 • 20c

Better Farming Methods

For County Agents, Vo-Ag Teachers, Soil Conservationists, and Extension Specialists

Spray Program Really Works . . . page 12

To KO insects is OK with Farmers! . . . page 16

NVATA Convention Photo Report . . . page 18

1955 Fertilizer Outlook . . . page 40

1955 Farm Outlook . . . page 42

PROFESSIONAL MAGAZINE
for Leaders who TRAIN and ADVISE Farmers

What's New in Ag Chemicals for '55

Summarizing:

- ☆ Fertilizers
- ☆ Defoliants
- ☆ Weed Controls
- ☆ Insecticides
- ☆ Fungicides

Millions of cases of MASTITIS

successfully treated

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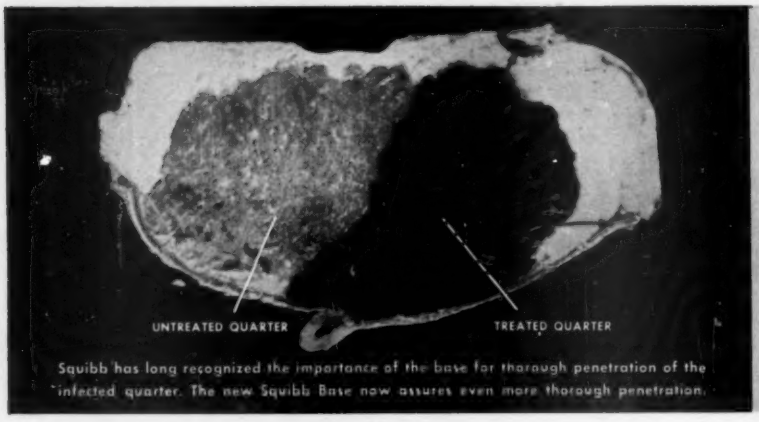

Squibb has long recognized the importance of the base for thorough penetration of the infected quarter. The new Squibb Base now assures even more thorough penetration.

New PENDISTRIN contains two powerful antibiotics—PENICILLIN and DIHYDRO-STREPTOMYCIN—in the new Squibb Base

You can recommend PENDISTRIN with confidence

PROVED! Over the years, thousands of dairymen have used millions of tubes of Pendistrin in treating mastitis... with great success! Pendistrin has stood the test of time... the test of efficacy. It's your No. 1 recommendation... now *better than ever* with the new free-flowing Squibb Base.

EFFECTIVE! Each tube of Pendistrin contains 100,000 units of penicillin and 100 mg. of dihydrostreptomycin. This antibiotic combination is among the most effective known for controlling usual mastitis-causing organisms.

FAST-ACTING! The special, new free-flowing Squibb Base of *New* Pendistrin disperses quickly throughout the quarter ...releases antibiotics rapidly, completely.

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TEST YOUR SOIL THE ACCURATE WAY

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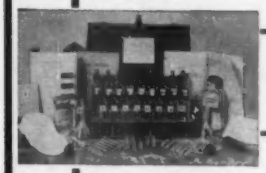

F 112-E-1

THE *Complete* SIMPLEX

Practical for use in any locality, requires no waiting, allows for frequent, yearly tests. Contains all the solutions and apparatus necessary for 100 to 300 soil tests for each of 15 important soil chemicals, including trace elements, plus tissue tests for Nitrates, Phosphorus and Potassium. $49.50 F.O.B. Fort Atkinson, Wisconsin.

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THE *Farm* SIMPLEX

This soil test outfit is designed for the smaller grower. It contains 100 tests for each of 5 soil elements plus tissue tests for Nitrogen, Phosphorus and Potassium. $25.50 F.O.B. Fort Atkinson, Wisconsin.

Soiltex A TEST FOR SOIL ACIDITY

F 115-E-4

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National Agricultural Supply Company

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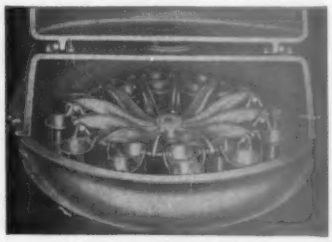

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If your schobl needs a new tester, order a Jalco today from this ad or from the New Nasco catalog.

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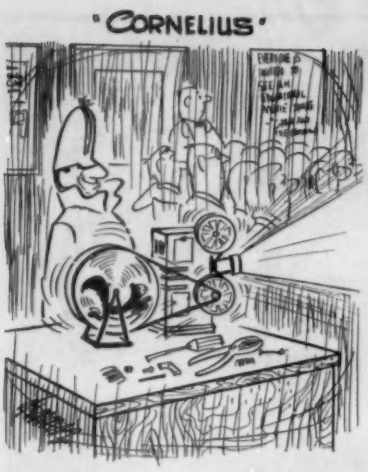

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Coming Events

January 4-5—7th Annual Pesticide School, North Carolina State College.

January 5-7—9th Annual Northeastern Weed Control Conference, Hotel New Yorker, New York City.

January 6-8—National Turkey Convention, Atlantic City, N. J.

January 10-14—Pennsylvania Farm Show, Harrisburg.

January 31-February 1—7th Annual Meeting of the National Cotton Council, Shamrock Hotel, Houston, Tex.

February 1-5—National Association of Soil Conservation Districts Convention, San Diego, Calif.

February 2-13—Houston Fat Stock Show.

February 13-20—Longhorn Recreation Lab., Burnet, Tex.

April 14-15—Annual Meeting of the National Institute of Animal Agriculture, Purdue University.

May 25-27—American Feed Manufacturers Association Convention, Morrison Hotel, Chicago.

June 12-15—48th Annual Meeting, American Society of Agricultural Engineers, University of Illinois, Urbana.

July 23-27—Convention and Trade Show of the National Audio-Visual Association, Hotel Sherman, Chicago.

September 11-14—National Association County Agricultural Agents Convention, East Lansing, Mich.

October 10-13—National FFA Convention, Kansas City, Mo.

Correction!

Cut this correction notice out and clip it to page 84 of the November, Better Farming Methods, film directory. On that page, at the top right hand column, you will note the listing of a film entitled "Orchards Afire".

This film is erroneously listed here under Sunkist Growers, and is obtainable from Ag Sciences Div., MPIB, Inc., 8 E. 61st St., New York City, N. Y.

Better Farming Methods

What's New in Ag Chemicals for '55

Professional Magazine for Leaders Who TRAIN and ADVISE Farmers. Written Exclusively for County Agents, Vo-Ag Teachers, Extension Specialists, Soil Conservationists and Other Agricultural Leaders.

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...for the changing pattern of plowing

CASE PIVOT ACTION

This amazingly simple feature stands as an example of truly progressive and practical engineering research . . . functional design that gives contour farming a new impetus, a new kind of accuracy for greater conservation benefits. Yes, pivot action, built into the implement itself just at the right point, permits these plows to keep all bottoms cutting at full width on curves . . . without skidding or increasing draft.

Break-Away recouples by merely backing tractor

Like pivot action, the Case Break-Away Safety Release is another advance toward faster, more efficient plowing. Stumps and stones that would damage fixed plows merely cause the Case Mounted Plow to uncouple from its foreframe. Backing the tractor recouples it. A touch of the hydraulic control lifts it over the obstacle, and plowing proceeds.

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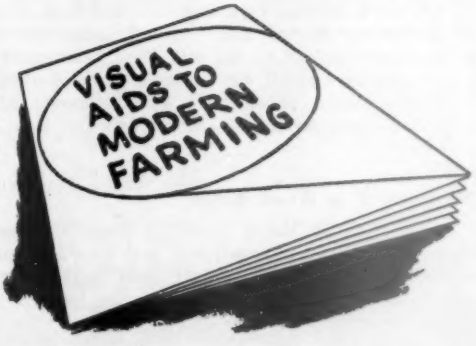


Acid Soil Aids Rock Phosphate

If you're going to use rock phosphate, get it on the field at least a year before you lime. That is the advice of Univerity of Wisconsin soils scientists. It takes a rather acid soil to make the phosphorus in rock phosphate available to plants. They conducted tests with oats growing in pots of acid silt loam subsoil (pH 5.1). When they mixed rock phosphate with the soil first, then applied lime a month later, the oats grew much better and took up more phosphorus than when the lime was applied before the rock phosphate. Another test, with quartz sand and small amounts of clay, also showed that the rock phosphate gave best yields on acid soil (pH 5.5).

Dalapon Kills Cat Tails

The job of getting rid of cat tails in drainage ditches is easy with a new chemical called dalapon according to Michigan State College. They recommend about 20 pounds of the chemical in 100 gallons of water for good control. The area covered will depend on how thick the cat tails are.

Rape is Good Turkey Range

Researchers at the North Central Substation, Eureka, S. D., have found that rape was one of the most useful forage crops for turkeys tried so far. They report that turkeys like rape and will eat it down to stumps if the supply is not plentiful. It is a non-sod-forming annual crop that can be seeded and pastured the same year. Some turkey growers include a light seeding of rape in their small grain. After the grain has been harvested, the rape will make sufficient growth to provide fall pasture and it will continue to grow until hard freezes occur.

Deep Plowing Gives Good Results

Two University of Wisconsin soil scientists reported at the American Society of Agronomy meeting that deeper plowing aids crops on land with acid and tight subsoil. They reported that hay yield increased on land that had been plowed six inches deeper than normal, with lime and fertilizer applied to the soil. First year yield increases were small, but second and third year increases were substantial. Deep plowing alone didn't increase yields unless fertilizer was also added.

Nitrogen is a Weed Killer

Field tests at North Carolina State College have shown that liquid nitrogen acts both as a fertilizer and a weed killer. College workers used liquid ammonium nitrate and side-dressed it on corn. The ammonium salt in the fertilizer acted as a contact weed killer. They also added 2,4-D and "Fab", an ordinary laundry detergent, to make the mixture an even stronger weed killer. The spray was applied to the base of the corn stalks and to the middle of the row.

Phenothiazine Used On Lambs

Results from tests at the Virginia Experiment Station show that a mixture of one part phenothiazine to 14 parts of salt did not cause ewes to dry up in milk, or prevent the lambs from nursing due to the supposed distaste caused by phenothiazine. This seems to disprove the theory that a phenothiazine salt mixture is not good for growing lambs.

Test Cotton Spraying

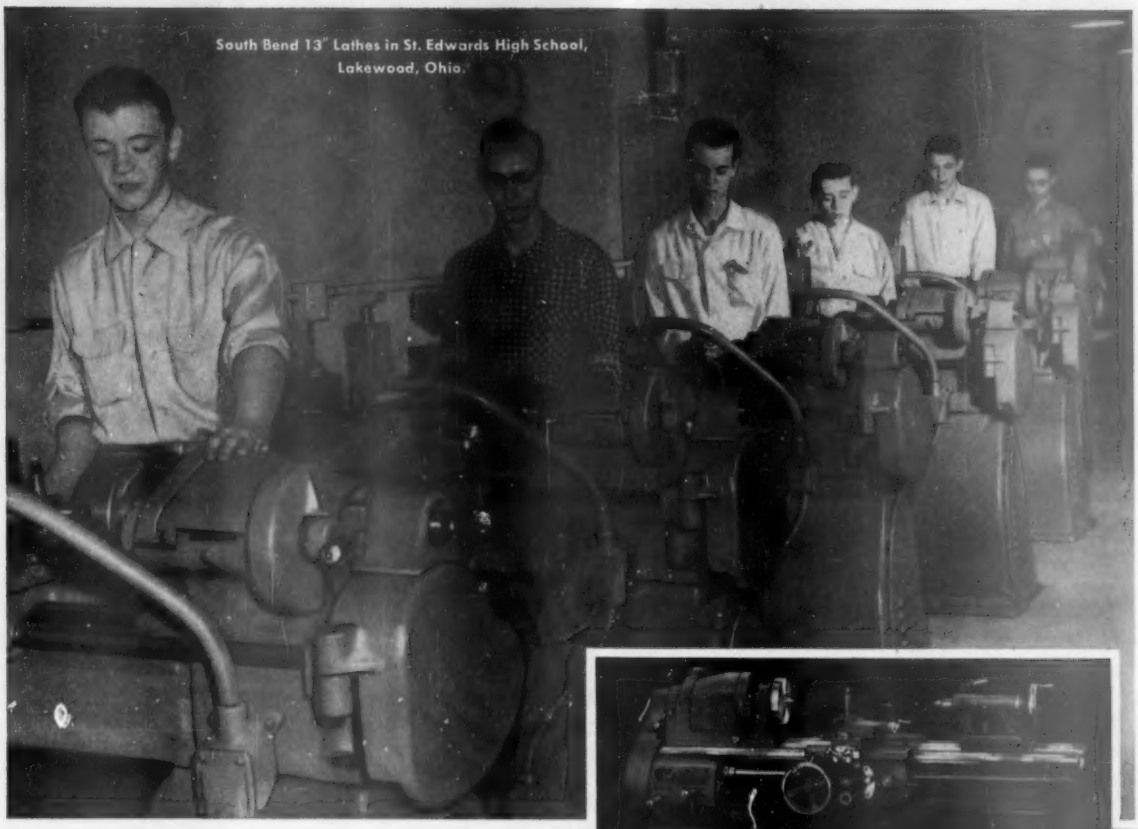
Results of tests from 1950-53 at the Texas Experiment Station show that spraying cotton at the rate of two gallons per acre is more economical than applying the spray at higher rates because of the time and labor saved in handling a smaller quantity of water. It was found that two gallons of spray per acre controlled the boll weevils and bollworms as well as six and fourteen gallons when measured in terms of yield and insect infestation. But the researchers emphasize that the amount of insecticide used on an acre of cotton must be the same whether applied in two, six, or fourteen gallons of water.

Study Grass Silage Preservatives

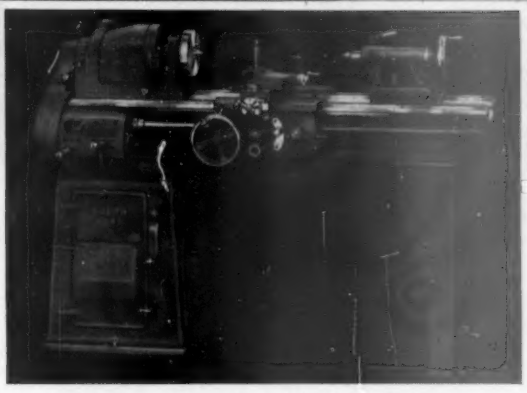
Dried beet pulp, ground corn, liquid molasses, dried molasses, and cane sugar, will give good results as preservatives for grass silage, according to researchers at Iowa State College. They are added at the time of ensiling. Experiments show that the addition of sodium metabisulfite is one of the most useful chemical silage conditioners yet tested. These researchers say, however, that good grass silage can be made without any preservative except when the silage has a high moisture content or when the silage consists of pure legumes. When this is the case, chemical and carbohydrate preservatives are useful.

Fertilizer Affects Corn Silking

In tests conducted by the Iowa Experiment Station, fertilizing second year corn hastens silking as much as 13 days over non-fertilized corn. In 1953, researchers found, depending upon the fertility level of the soil, that it was generally true that second year corn silked 5 to 10 days later than first year corn. Since the time between silking and reaching maximum dry weight is relatively "fixed," hastening the silking date has the effect of hastening the maturity date and reducing the danger of frost injury. — *End*



South Bend 13" Lathes in St. Edwards High School, Lakewood, Ohio.



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WASHINGTON NEWS

USDA Severs Group Tie-ups

Sometimes it takes a week or more to get a day's work done in Washington. Case in point is Secretary Benson's recent memo to "clarify" the relations of USDA folks with farm groups.

By Fred Bailey and Jay Richter
Agricultural Services
(Exclusive to Better Farming Methods)

Some farm leaders now think there should be another memo to clear up the clarification. It all started when Benson was asked by Herschel Newsom, Master of the National Grange, to reaffirm the stand taken several years back by USDA—namely, that "it is not proper for employees to accept compensation from general or specialized organizations," etc.

Herschel Newsom

Newsom was aiming at the remaining ties between the Farm Bureau and Extension Service—an association that has long troubled the Grange, and other farm groups. Benson subsequently went ahead to issue "clarification" Memo No. 1368. It says that USDA employees are not (1) to accept free office space or contributions for salary or traveling expense from farm organizations; (2) to advocate a particular organization or solicit membership in any specialized organization; (3) to approve contracts with any cooperative or other commercial organization for "check-off" or membership dues except upon written request of individual farmers.

Organizations he meant, said the Secretary, include the Grange, Farm Bureau, Farmers Union, co-op groups, breed and commodity groups, and soil conservation districts, among others.

What relationships between these groups and USDA he had in mind, the Secretary did not say.

Newsom and other farm leaders have not been happy about the memo as issued to the public. The Grange chief sees no need of "beating around the bush" about Farm Bureau-Extension ties, few that there may be. He was nettled to see his organization the first listed, seeing no problem of association between it and USDA employees.

Co-op leaders are concerned lest the memo mean they are not free to seek the help of county agents. "Concern" is being shown by dairy co-ops, says the National Milk Producers Federation, for fear the memo may "result in discontinuance of price support purchases until a determination could be made as to the type of check-offs used." The federation has asked the Secretary "for a clarification."

Will SCS Be Transferred?

Inside word in Washington is that if a government study commission recommends it Benson will seek to transfer the work of SCS to the States. In which case watch for the fur to fly.

Leaders of local soil conservation districts already have made it clear they will lobby against such a move to the last lawmaker on Capitol Hill. Benson, however, would stand at least a fair chance of getting such a transfer through, even though the matter must be taken up with Congress.

Reason is that no new legislation would be required. Only a veto by either the Senate or House within 60 legislative days after the plan is presented to Congress could stop it.

Peterson's Appointment

There appears to be general satisfaction in Washington with the appointment of Ervin L. Peterson as Assistant Agriculture Secretary to succeed J. Earl Coke.

GOP political strategists, who had a hand in the choice, think the new USDA official will help to keep the party out of trouble with farmers.

Peterson, former director of agriculture in Oregon, is an experienced dairyman. He is in general charge not only of USDA's Extension work, but also of conservation agencies—a combined responsibility that may call for some use of his reputed diplomatic ability.

Conservationists in the department tell you that they are pleased by the Peterson appointment. They indicate their belief that the new Assistant Secretary will "back up" SCS in its efforts to get work projects started across the country under the new Watershed Protection Act.

Peterson's lack of direct knowledge of Extension probably can be more than made up by Extension Director Ferguson. And by

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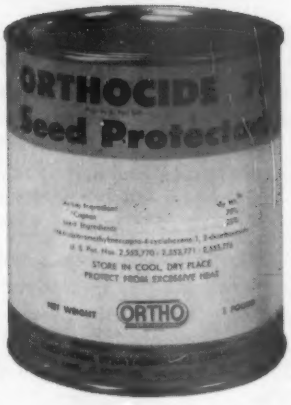
SEED PROTECTANT OFFERS ALL THESE ADVANTAGES!

ORTHOCIDE 75 *Seed Protectant*



1. GIVES TOP FUNGICIDAL PROTECTION

Prevents seed rot and damp-off diseases on corn, cotton, soybeans and many other crops. Also protects against molds and other fungi causing seed and seedling loss. Makes possible better stands—higher yields.

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YOU MAY BE AN EXCEPTION—but most farmers lose from ½ to ¾ of the profit possible from barnyard manure. Good management plus modern NEW IDEA equipment can easily double profits from manure.

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Your old machine will never be worth more. Catch your New Idea dealer while he's in a trade-in mood. Hit pay dirt by saving money right now! Swap your way up to a *new, New Idea* spreader during *New Idea* Trade-In days!

NEW IDEA

FARM EQUIPMENT COMPANY

DIVISION AVCO DISTRIBUTING CORPORATION

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department veteran, Phil Aylesworth, a man finely tuned to the sometimes delicate relations between people and among agencies at USDA.

Aylesworth has recently shifted to the Extension Service to be liaison man (meaning, "peacemaker") between other agencies and Extension. He was formerly executive assistant to ex-Assistant Secretary Coke.

College Agriculture Enrollment Up 7%

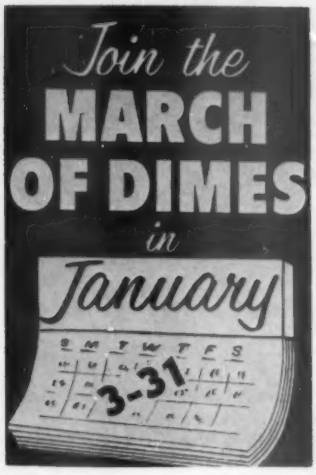
Number of students majoring in agriculture at Land Grant colleges this year is up only one-half of one percent, although over-all enrollment is up seven percent. Demand for young people trained in agriculture, meantime, is heavy and not decreasing.

This was the picture drawn recently by Dr. Charles F. Simmons of Alabama Polytech at the annual meeting of the Association of Land-Grant Colleges and Universities in Washington. Other highlights of the session:

(1) The Association voted to invite into its membership 17 Negro Land Grant colleges of the southern states. For many years the Negro colleges have had a separate organization.

(2) A few institutions, said C. V. Noble of the University of Florida, are arranging for on-farm training and internship in farm industry for ag students. They include the University of California, Cornell, Missouri, and the USDA.

(3) Elected new Association president was Dr. Lewis Webster Jones, head of Rutgers. Other offices of importance to agriculture, and their new chairmen include N. D. Peacock, Tennessee, Division of Agriculture; Louise Rosenfeld, Iowa, Division of Home Economics; K. O. Broady, Nebraska, Council on General Extension; and Dr. C. C. Murray, Georgia, Experiment Station Section of the Association. *End*



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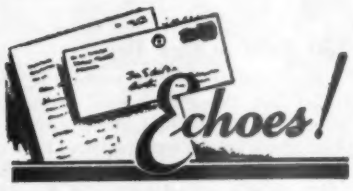


Glad to Cooperate . . .

"Since I won't be able to attend the national meeting of the club agents in Chicago next week I won't have the opportunity to thank you personally for the wonderful way you have cooperated with me and the NACCA publicity committee during this past year. I have appreciated all your comments, suggestions and willingness to publish what we sent you. I regret that we weren't more regular.

"I know, too, that your field reports concerning 4-H club work are appreciated by all club agents. The report in the October issue was most interesting."—*Martena Patterson, County Club Agent, Ripley, W. Va.*

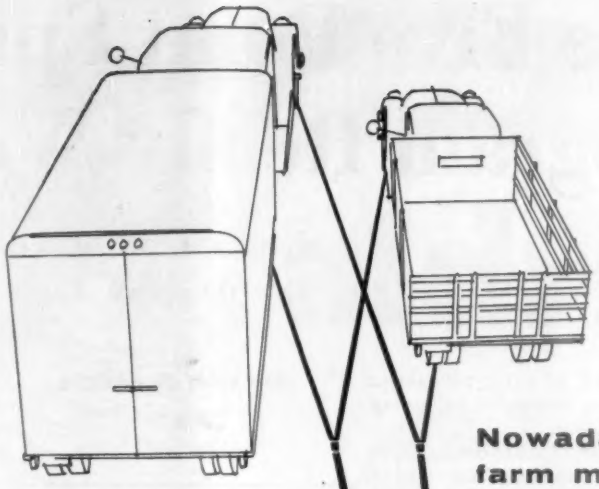
Film Directory Helpful . . .

"We are happy to receive the November 1954 issue of Better Farming Methods, which gives a prominent listing to Bureau of Mines technical-educational motion pictures of interest to your thousands of readers.

"The various articles on these motion pictures are particularly well done and the tips on projection techniques and care of films should be appreciated by everyone, especially those who circulate the films and are ever mindful of the possibility of damage."—*Gene Nicolai, Chief, Graphic Services Section, U. S. Department of the Interior.*

Thanks, Lou . . .

"We have just received our Better Farming Methods Ninth Annual Directory issue and hasten to congratulate you on another fine production."—*Louis H. Wilson, Director of Information, American Plant Food Council.*



Nowadays farm markets depend on this span of horsepower!

The span of horses that used to do the work on every farm was long ago replaced by machines which do the work better. But most of America's farms depend on a new "team" which helps *distribute* farm products to ever-increasing markets.

This span of horse*power* is made up of the farmer's own truck, which he uses to deliver raw materials to primary markets (such as cannery, mill and processing plant), and the *intercity truck*, which delivers the finished products to stores all over the United States.

The intercity truck takes ketchup made from Indiana tomatoes to Idaho; takes cotton goods from Southern mills to New York garment centers, and finished clothing to Chicago and San Antonio. It takes Minneapolis flour made from Kansas wheat to bakeries and food stores in Kentucky and Iowa. And it makes the market for all these products bigger because *wherever consumers are, there trucks go also!*

Both kinds of trucks—the farm truck and the intercity truck—are essential to the preservation and the expansion of farm markets in years to come!

AMERICAN TRUCKING INDUSTRY

American Trucking Associations
Washington 6, D. C.

This Five-Point Spray Program Really Works!

Farmers unite with their farm advisers to destroy farm insect infestations

By Bob Jarnagin
University of Illinois

● THURSDAY, APRIL 2, 1953, started like any other bright, spring morning in Morris, Ill.

M. E. Tascher, Grundy county farm adviser, drove his customary way to the office across the street from the courthouse. And, as usual, he dug into the accumulation of things on top of his desk to try and make some headway before the day's callers started to arrive.

He didn't have to wait long. About 8:30 Charles Johnson walked in and plumped himself down in the chair across from Tascher's desk. "What can I plant for emergency pasture this year?" he asked. "I'm not going to have any clover."

Worms Take Over

Tascher looked over in surprise. "What's that?"

"A bunch of green worms are eating up my clover," Charles said. "I was out nosing around the new seeding this morning and found the lower leaves gone. It won't be long until all the plants are eaten up. I counted as many as 30 to 40 worms on some of the plants. Wonder what they are."

The worms were clover weevils.

For some reason Grundy county was the hot spot in a clover weevil infestation that was serious in many Illinois counties in the spring of '53. Without a good emergency spray program there would have been little, if any, clover and alfalfa to feed in the county.

When the dam broke Tascher was ready. As soon as it became apparent that the county had a real emergency on its hands, he started the wheels of his spray program turning.

This is His Program

Step by step, this program involves: (1) Early, positive identification of the infestation; (2) alerting the custom spray operators to the problem; (3) informing the county press and radio; (4) getting all the farmers alerted by telephone and word of mouth as quickly as possible; and (5) spraying as fast as possible in the worst areas.

Tascher's Program Step by Step

1—Identify
2—Enlist
3—Inform
4—Alert
5—Spray

These weren't the first bugs ever to hit Grundy county. Not by any means. Every year some corn borers were around to stir up interest. And spittle bugs had become an annual control problem.

But in 1953 clover weevils struck about three weeks before the usual spraying time for spittle bugs. And some spittle bugs and plenty of aphids also showed up at the same time as the weevils to add to the confusion.

The end result of all this unusual early-spring activity was that Grundy county got its clover spray program under way a week to 10 days ahead of the rest of the counties. That jump saved the clover.

Insecticides are Needed

L. C. Borger, manager of the Grundy Service Company, and Earl Davies, local custom spray operator, drove miles scouring the countryside to get all of the spray materials on hand that they could find and buy. All of the other dealers and custom operators in the county pitched in to help all they could as soon as the weevil invasion started to mushroom.

Interested farmer leaders in every township cooperated in the drive and insisted that their neighbors go out and check their fields even though there was no apparent damage.

Farm Adviser Tascher and Assistant Farm Adviser Bob Perdue spent about half their time for a month checking fields. Many days the phone started ringing at home at 6 o'clock in the morning and kept it up all day long.

150 Calls in One Day

They didn't keep a record of the calls, but the office girls estimated about 150 calls came in on one day. And there were nearly always four or five farmers patiently waiting in the office to consult with one of the advisers.

"What shall I do, Tascher?" they asked. "Put on .3 pound of actual benzine hexachloride an acre just as soon as you can get it on," was Tascher's standard advice.

The .3 pound an acre was sound advice from Extension Entomologist Pete Petty, College of Agriculture, and the Illinois Natural History Survey. That amount gave good control when the old .2 pound an acre recommendation was not working too well. A new recommendation here meant the difference between good and no stands at all, or between good and poor stands in most cases.

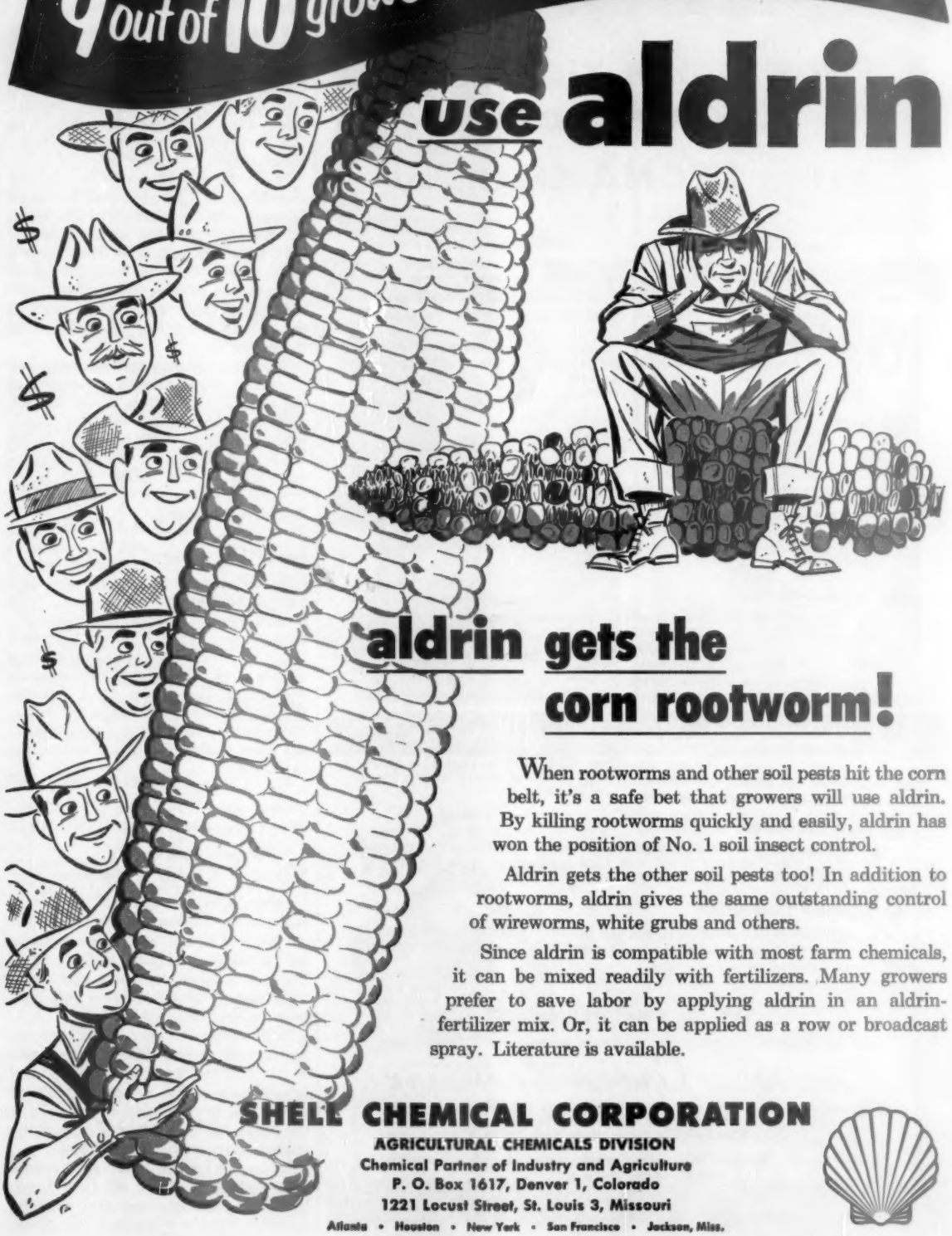
Contact All Farmers

As soon as they saw the danger the extension people contacted every farmer they could find in town and started the word that a big fight was brewing to save the clover crop and that they'd better get out in their fields to start checking. Tascher got a big story in the Morris Herald that afternoon and received excellent cooperation from the county press all through the battle.

Every farmer contacted was asked to tell his neighbor to check his fields, and they followed through. Within a week the word had spread to all areas in the county and the results of the spray program were beginning to show up.

Tascher estimates that 1,200 farms in Grundy county alone were hit by clover weevils and that from 65 to 70

9 out of 10 growers who treat for soil insects use aldrin



aldrin gets the corn rootworm!

When rootworms and other soil pests hit the corn belt, it's a safe bet that growers will use aldrin. By killing rootworms quickly and easily, aldrin has won the position of No. 1 soil insect control.

Aldrin gets the other soil pests too! In addition to rootworms, aldrin gives the same outstanding control of wireworms, white grubs and others.

Since aldrin is compatible with most farm chemicals, it can be mixed readily with fertilizers. Many growers prefer to save labor by applying aldrin in an aldrin-fertilizer mix. Or, it can be applied as a row or broadcast spray. Literature is available.

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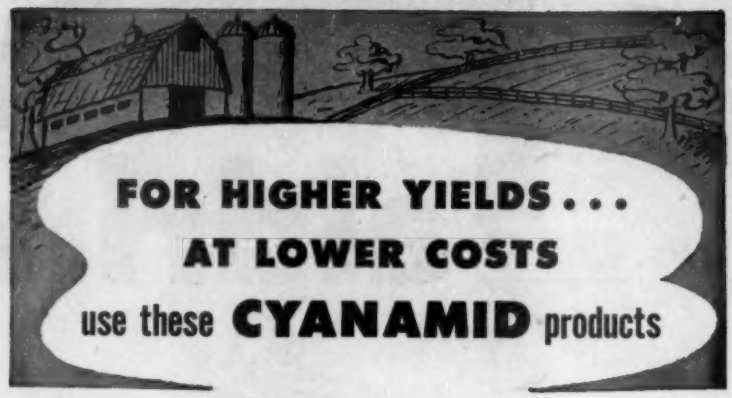

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THIOPHOS® Parathion Insecticides . . . for broad, low-cost protection against more than 100 different insects, on more than 50 different crops.

MALATHION Insecticides . . . combine low animal toxicity with high insect toxicity. Control mites, aphids and many other insects on fruits, vegetables and ornamentals. Also highly effective in controlling flies – even those resistant to DDT.

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AERO* Cyanate, Weedkiller . . . selective, contact herbicide for killing weeds in onions and other crops.

3 DEFOLIATION

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4 FERTILIZATION

AEROPRILLS® Fertilizer Grade Ammonium Nitrate . . . contains 33.5% nitrogen, half in quickly available nitrate form and half in more slowly available ammonia form.

AERO® Ammonium Sulphate . . . a 21% nitrogen, free-flowing material, for manufacturing mixed fertilizers and for direct application.

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AERO® Cyanamid, Granular . . . for weed control in tobacco plant beds; for disease (sclerotiniose) control in certain vegetable crops. Ideal for direct application, and to plow down with cover crops and stubble to make humus.

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AERO-PHOS® Florida Natural Phosphate . . . replenishes the natural phosphorus reserve in the soil. One application lasts for several years. Low cost; easily applied in any season.

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WRITE FOR DESCRIPTIVE LITERATURE

AMERICAN Cyanamid COMPANY

Agricultural Chemicals Division
32-E Rockefeller Plaza, New York 20, N. Y.

Branch Offices: Donaghey Bldg., Little Rock, Ark.
1440 Broadway, Oakland 12, Calif.

percent of the total clover and alfalfa acreage in the county was sprayed. By the 15th to 20th of April the infestation was in full swing and by the 3rd of May the spray program had complete control.

Spray Makes Difference

Silas Hagen, one of the good cooperators near Morris, says you could tell the boundary of Grundy county by the difference in the clover fields if you drove out any of the country roads. Big differences even showed up this spring between sprayed and unsprayed fields, Tascher says.

Well, the weevil terror in Grundy county made believers out of the spray operators. They want all of the latest information from the research people that they can get now. Here was a case where farmers brought spray operators in to the county office to get the right spray recommended. And the county office had the right spray to recommend.

This year Grundy farmers have had to tackle much smaller problems of cut worms, grubs, flies, clover weevil, and corn borer. But another clover weevil situation will not come again because those farmers are on the lookout early every spring and know exactly what to do if they find an infestation starting.

Stress Fly Control

Special programs in 1953 and this year have featured fly control. Petty helped set up fly control demonstrations this year on seven different farms in Wauponsee township using a different combination of materials on each farm. Two farms using a malathion-molasses combination had beautiful control. And many county farmers have visited the farms to see and learn.—*End.*

★

Lye Will Cleanse Milking Machine Rubber

Inexpensive hot lye soak treatment each week makes milking machine rubber last longer and helps improve milk quality, according to Ohio State University. This treatment takes butterfat out of the rubber and kills bacteria.

Treatment is easy. Put enough water in a steel or graniteware kettle to cover all rubber parts. Add 2 level tablespoons of lye for each gallon of water and heat it until it boils. Take the kettle off the stove and put all the rubber parts in the hot solution.

When the lye solution cools to room temperature, pour it off then scrub the parts in hot water and washing powder. Finally, rinse and dry them.

4-H'ers Sell Farmers 1000 Canvas Slappers

● ONE THOUSAND canvas slappers? The packing plant said that the 4-H boys under County Agent Bob Hall, Delaware county, Iowa, would never sell that many. A better order would be 700.

So, Hall changed his order. And what happened? Four-H boys sold the 700 before the first week was up.

The sale of these canvas slappers for driving and herding livestock was part of the program for 4-H club boys in Delaware county, Iowa, on livestock marketing losses. This was stressed in all clubs during the year 1954.

Program Is Successful

At the close of the program, well over 1,000 canvas slappers had been sold to farmers. This meant that better livestock marketing methods were being adopted in Delaware county.

The program was headed by County Agent Hall. It was not a required program for 4-H club boys, yet 300 enrolled and 225 of this number attended the meetings.

In the beginning, a goal of 1,800 farmers to be reached was set up. The goal was almost attained.

The boys made a survey of farmers in the county to determine what type of loading chute was used and how they drove their livestock when loading. They also inquired as to how cattle were dehorned.

Demonstrate Techniques

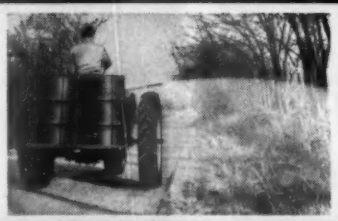
So that the boys might make a good impression and know exactly how to call on farmers, each meeting had a demonstration. Here the boys were coached on how to approach the farmer and sell him on the idea of using a slapper in his livestock marketing program.

The canvas slappers were sold at practically cost, and the goal was not primarily to make funds for 4-H club work, but to encourage farmers and provide them with a means of decreasing loss in livestock through improper marketing methods.

The program was successful in two areas: (1) It corrected many faults in marketing and loading livestock, and materially reduced livestock losses from improper handling; and (2) it brought the farmers closer to the 4-H club and extension work in the county.—*End*

ONE farm sprayer does ALL your spraying jobs!

COMPLETE . . . five sprayers in one!



TROUBLE-FREE . . . nozzles never clog!

no cumbersome boom to manipulate!

The Hanson Brodjet is actually five farm sprayers in one. You can easily and quickly convert it from a tractor-mounted field and row crop sprayer to a roadside and fencerow sprayer or to any of three hand-guns to handle all your spraying jobs. Its unique simplicity gives you dependable, trouble-free operation with superior chemical distribution. You can spray at speeds up to 15 m.p.h. and with swaths up to 68 feet. There is no swaying boom to slow you down. Hanson Brodjet applies all types of weed killers, insecticides, liquid fertilizers, defoliants, etc. at high or low pressures and gallonages.

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Oklahoma FFA boys say . . .

By Roy W. Dugger
Oklahoma A & M College

To KO Insects is OK with Farmers

This is the power sprayer owned by the Jenks Future Farmer Chapter. Over 50 farmers are using it to spray regularly.

● SPRAYING PROGRAMS are now being advocated by one out of every five Oklahoma FFA Chapters.

While crop spraying is popular in some of the cotton and vegetable producing communities, the major emphasis is on the control of external parasites of livestock and poultry.

Portable machines that may be hauled in a pickup truck, or are mounted on wheels and may be pulled like a trailer, are usually powered by an air-cooled gasoline engine. Insecticide is kept mixed in the tanks which hold from 30 to 60 gallons.

Developing up to 400 pounds per square inch pressure, attachments are available that provide effective control of insects and parasites by spraying animals, barns, sheds, and chicken houses. Other popular uses include spraying shrubs, trees, and small garden plots.

Machine Pays Dividends

In 1947 the Jenks Chapter of the Future Farmers of America purchased a sprayer for $427. The machine paid for itself and made profit for several years. Its use increased, however, until the vo-ag students no longer had enough time to fill all of the requests of farmers for livestock and orchard spraying.

Today, more than 50 farmers use the sprayer regularly and pay only for the insecticide and fuel used. When the sprayer is checked out by a farmer he must agree, in writing, to return it at a specified time and pay any repairs made necessary by its use while in his possession.

The Jenks vo-ag teacher, Edward Perry, considers his FFA chapter is rendering a valuable service to the community by making the sprayer available to farmers who cannot afford to own one.

Members Use Sprayer

Members of the Jenks FFA chapter make extensive use of the sprayer in their vo-ag supervised farming programs. The effective control of external parasites on livestock and poultry has helped them raise several blue ribbon winners to show in local, county, and state fairs.

Thurman L. Rhodes, adviser of the Fort Towson chapter of the Future Farmers of America, considers that the chapter-owned and operated sprayer is a good source of chapter income. He also believes it contributes to the "learning by doing" concept of education in agriculture.

Students Operate Sprayer

The Fort Towson Future Farmers began their spraying program in 1953. The equipment cost approximately $500 and was financed through the cooperative efforts of high school vo-ag students and farmers enrolled in an adult farmer class that was studying about the control of external parasites of livestock and poultry. Operated solely by vo-ag students, the sprayer has paid for itself and nets the chapter approximately $250 annually.

The boys who work on spray teams are paid the prevailing wages for farm machinery operators when doing custom work. Farmers pay a nominal charge computed on an animal or unit basis for the spraying service. Farmers furnish the insecticide and the FFA chapter keeps the sprayer in proper operating condition.

The farmers in the Fort Towson community consider the FFA boys are making a valuable contribution to the improvement of livestock and poultry.

There is no competition with commercial sprayers. Small scale farmers could not afford to buy individual machines and many of them use the FFA spraying service regularly. A few of the larger operators employ the FFA spray crew to supplement their own sprayers during rush seasons.

Profits Finance FFA

Fort Towson vo-ag students are trained as sprayer operators by assisting older boys who have had experience. They are given a performance test by the teacher before being allowed to join a spray crew that does custom work.

Operation of the machine by properly trained vo-ag students helps keep repairs at a minimum and insure better control of insects and parasites. The profits made by the sprayer operation are used to help finance the chapter program of work.

Hence, it helps the FFA boys carry out several of their chapter objectives while making a definite contribution to the achievement of educational objectives of vo-ag among high school boys and adult farmers.—*End*

Available for showing to your farmer friends!

NEW! 22-MINUTE SOUND and COLOR FILM

"HIGH LEVEL PROFITS"

The story of today's soundest way to raise more and heavier broilers . . . Continuous "HIGH LEVEL" feeding of

AUREOMYCIN*

CHLORTETRACYCLINE

This new 16 mm. film—"HIGH LEVEL PROFITS"—tells the story of broilers being raised under actual field conditions *with* and *without* continuous "HIGH LEVEL" feeding of AUREOMYCIN Chlortetracycline. Each step of the way is tested and charted—from the time baby chicks go into separate pens, through 4 and 8 weeks' weighing, on to better prices at market for heavier, finer birds fed AUREOMYCIN *continuously!* This new film was made especially for broiler growers but will be of interest to all poultry producers in your neighborhood!

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Vo-Ag Teachers, Extension Specialists! Use this coupon to order your print of "HIGH LEVEL PROFITS."

NOTE: Please request film AT LEAST FOUR WEEKS in advance of anticipated showing.

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NVATA Convention? Excellent!

(All photos by Better Farming Methods)

Delegates elected officers . . .

These are the NVATA leaders for 1955: (l-r) Robert Howey, Illinois, vice-president; Lionel Cross, California, executive secretary; S. F. Peterson, North Carolina, president; Robert Bishopp, Wyoming, vice-president; Robert Wall, Virginia, past-president; H. E. Throckmorton, W. Va., vice-president; Neldon Taylor, California, treasurer; Luther Hardin, Arkansas, and James Wall, Nebraska, vice-presidents.

. . . attended regional meetings . . .

Bob Howey, vice-president, Region IV, presides over a meeting of his region. To Howey's right is Joe Metzger, Indiana vo-ag president, while Wilbur Brokaw, Illinois president, is reading a report.

Max Lampo, retiring member of the executive committee, conducts a discussion of Region II men. Seated around the table are Mel Adams, Colorado; Flowell Payton, New Mexico; Lampo; Emery Groves and Charles Mantz, Kansas.

. . . and swapped ideas in bull sessions.

On the left is president-elect "Pete" Peterson talking shop with Marion Roche, Florida; Luther Hardin, Arkansas; and Joe Slaven, Arkansas.

Holding the spotlight with a copy of his state vo-ag newsletter is Burton Gregg, Vermont. Others, l-r, Jim Peters, Virginia; Robert Hoffman, Pennsylvania; Richard Rozelle, George Dodge, New York; and Harley Sporelein, Pa.

● THE NVATA celebrated its sixth birthday in San Francisco, Calif., December 2-7.

Approximately 150 vo-ag teachers from all sections of the United States attended the convention sessions.

Delegates elected S. F. "Pete" Peterson, Ayden, N.C., as their president for 1955. Retiring president is Robert Wall, Luray, Va.

Newly elected treasurer is Neldon Taylor, Redding, Calif., replacing Jess Smith, Lake Geneva, Wis., who retired from the position. Lionel Cross was retained as executive secretary.

Newly elected vice-presidents were Luther Hardin, Searcy, Ark., Region V, and James Wall, Waverly, Nebr., Region III. They replaced S. F. Peterson, North Carolina and Leon M. Johnson, Minnesota, respectively.

The NVATA convention in 1955 will be held in Atlantic City, N.J.—*End*

On the lighter side, delegates won prizes . . .

These men were winners in the Exchange of Ideas Contest: L-r: Richard Rozelle, New York; Joe Metzger, Indiana; A. W. Heinze, California; Luther A. White, Alabama; Flowell Payton, New Mexico; and L. E. Watson, Nebraska. Prizes were donated by the Sears Foundation and the National Agricultural Supply Company, Fort Atkinson, Wis.

. . . attended the NVATA breakfast . . .

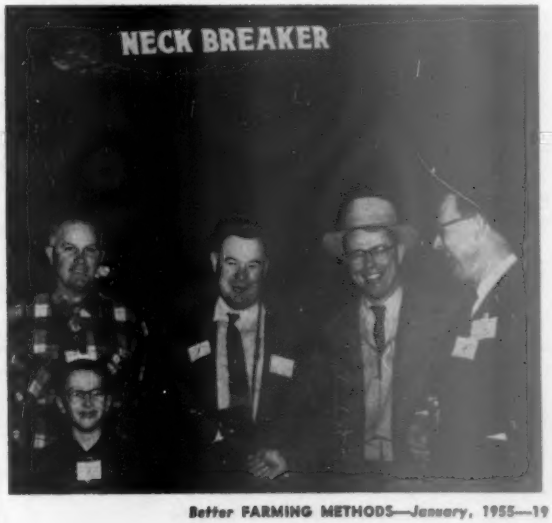
Around the breakfast table beginning in the center, l-r, are: Hewitt Youtz and Ray Lowe, Wyoming; Paul W. Vance, Arizona; J. O. Reed, Wyoming; Elvin Schultz, Nebraska; Roy Reno, Wyoming; and Victor Edman, Arizona.

. . . joined the 30-Minute Club . . .

Several years ago, the NVATA inaugurated a 30-Minute Club, where they accepted members who had given at least 30 minutes each year to publicizing their association. These men have qualified. L-r: L. E. Watson, Nebraska; Lavell Parsons, California; T. O. Beach, Arizona; Everett Clover, Iowa; Don Mullen, Wisconsin; Dirk Miller, Iowa; Max Lampo, Missouri; Clarence Heming, Minnesota; and Jack Kroech, Missouri.

. . . and took the Sears tour.

A visit to the Sunsweet Prune Growers packing plant saw Kansans Charles Manz and Cliff Eustace filling their pockets with prunes. At the right, deep in the Redwood Forest, Don Kabler and son, Oregon (left), Don Mullen, Wisconsin; and Jack Sattorius, Iowa, pause before a huge redwood with the editor of Better Farming Methods.



What's New in Insecticides

Insects? Chemicals Ban Them

By Harold Gunderson
Extension Entomologist
Iowa State College

● THE PAST 10 years have seen a revolution in pest control due to the introduction and wide use of DDT. This truly wonderful insecticide was quickly followed by a host of other chemicals, some chemically related to DDT, others completely different.

Harold Gunderson

This bewildering array of new and effective insecticides has caused some confusion among users. Therefore a brief review of the "old" standbys and a preview of some of the new bug killers is timely.

Let's start with the *chlorinated hydrocarbons*—among which we find both old and new insecticides.

Production Becomes Stable

DDT, chlordane, BHC and lindane, toxaphene, methoxychlor, or TDE have apparently reached a sort of equilibrium—if you can imagine stability in connection with unpredictable insect outbreaks. It is true that demand for a particular insecticide fluctuates violently from year to year. Over recent years, however, production and use of these chemicals has been quite steady.

At the same time, production of the newer chlorinated hydrocarbons is increasing. To me, this one point emphasizes the miracle of modern insecticides. The important uses of all organic insecticides increase as new chemicals are found.

These newer chlorinated hydrocarbons include aldrin, endrin, dieldrin, and heptachlor. The greatest recent advances among the chlorinated hydrocarbons have occurred here.

Treated Forage Is Safe

A recent publication discussing the length of residual life, their storage in fat, and secretion in milk is important. USDA findings indicate that heptachlor-treated forage is safe to be fed to dairy cows or to any class of livestock 10 to 15 days after application. Aldrin disappears from treated forage in 15 days and dieldrin in 21 days. This means that pastures and hay fields can be treated for grasshoppers without the annoyance, inconvenience, and hardship of keeping livestock out of pastures or keeping treated hay separate from the rest of the hay crop.

Similarly, eased restrictions on the use of dieldrin in plum curculio control is certainly news. We are now able to use dieldrin in two post-bloom fruit sprays—that means better fruit.

Dieldrin Gains Importance

Dieldrin has also been granted label approval as a household insecticide. It is used as a 0.5 percent spray or 1 percent dust in spot treatment for control of all household insects.

Another development in the chlorinated hydrocarbon insecticides was the failure of aldrin, chlordane, BHC, lindane, and toxaphene in grasshopper control during the extremely hot weather of 1954. Dieldrin appears to have held up well under these conditions.

Dieldrin also gave remarkably good results against armyworms and cutworms in Missouri in 1954.

Lindane Still Used

The addition of chemicals which reduce the volatility of lindane has lengthened the residual life of this insecticide and increased its usefulness against insects.

The use of lindane, aldrin, heptachlor, and dieldrin as seed treatment to prevent attack by maggots and other seed destroying insects, and the use of aldrin, chlordane, BHC, dieldrin, endrin, heptachlor, and toxaphene for widespread effective control of many soil insects is new.

Organics are Powerful

The *organic phosphates* are probably the most fascinating group of chemicals now available. They include some of our most toxic insecticides and some which are very low in mammalian toxicity.

Some of these insecticides are absorbed by plants and are translocated to all parts of the plant. Sucking insects, mites and some caterpillars are killed when they feed on treated plants. These are the systemics, At present, the systemics are used only on cotton, some fruit trees (in California), and ornamentals in the United States. In Europe, two of these insecticides—Schradan and Systox—are used on many vegetable crops for the control of aphids and mites.

Several new phosphates were in general use in 1954. Malathion did excellent work against flies, aphids, scale insects, mites, plum curculio, and some caterpillars. Malathion has very low acute toxicity to warm-blooded animals. As a result, we will see it incorporated into more and more small-package vegetable and flower garden all-purpose formulations.

Test Many New Ones

Diazinon is another organic phosphate, excellent and long-lasting against flies. It is more toxic to warm-blooded animals than malathion, but lasts on treated surfaces from three to five times longer.

Dipterex (Bayer L 13/59) is a third new organic phosphate which shows great promise. It is being marketed now in fly baits.

Granular or powdered fly baits containing malathion, diazinon, or Dipterex and attractants such as sugar, molasses, fish meal, and disks impregnated with these materials are being widely used. Our experience in ...ates that these baits give good control of houseflies where competing attractants are kept at a minimum. They also control field cricket infestations in the house.

Study Fly Control

Chlorthion, pyrazinon, and 4124 were widely used in 1954 on an experimental basis in fly and field crop pest control. It is too early to evaluate these chemicals or to predict their place in the over-all insecticide picture.

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For advancing research and exploitation on new insecticides, everyone can hail the passage of the Miller amendment to the Feed, Drug, and Cosmetic Act. This amendment, Public Law 518, provides for the regulation and control of chemical pesticides *separate* from chemical food additives of other kinds, sets up machinery for obtaining tolerance data and for review of tolerances by experts and courts.—*End*

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- ☐ Genicop* DDT— Copper Spray Powder
- ☐ Genithion* P-15, 15% Parathion Spray Powder
- ☐ Genithion P-25, 25% Parathion Spray Powder
- ☐ Genithion PEM-250 (East), 25% Parathion Emulsifiable Concentrate
- ☐ Genithion PEM-250 (West), 25% Parathion Emulsifiable Concentrate
- ☐ Orchard Brand EM5-25, 5% Parathion—25% DDT Liquid
- ☐ Lindane—Control of Flies on Livestock and in Barns
- ☐ Lindane—25% Spray Powder
- ☐ 20% Lindane, for nursery stock, ornamentals and flowers
- ☐ 20% Lindane, emulsifiable concentrate for transplanter solutions
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- ☐ O.B. 3-5 Liquid (Cotton), 1.2 lbs. Gamma Isomer of BHC and 2 lbs. DDT per gallon
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- ☐ 2, 4-D Ester Weed Killer
- ☐ Sodium TCA
- ☐ Potassium Cyanate
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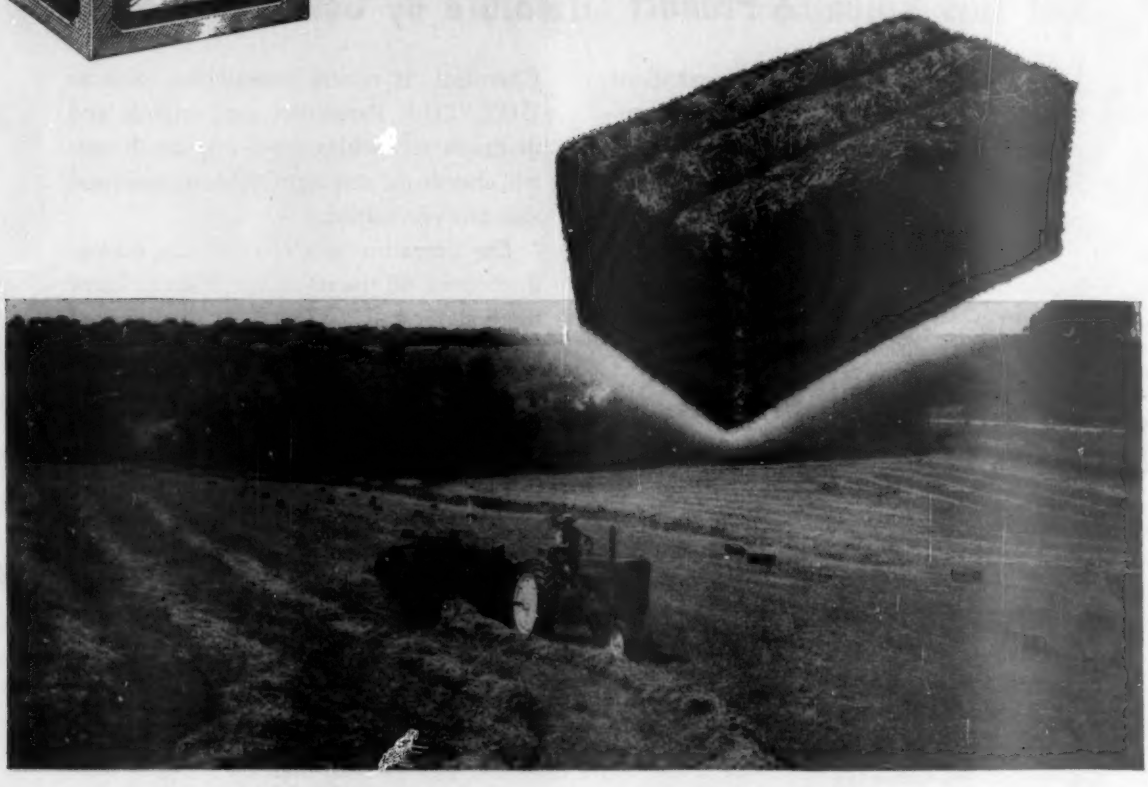

No doubt about it—this will sound a million times removed from the subject of bales, but . . .

If you've ever hung around the kitchen much at canning time, you're sure to have noticed it—the similarity, that is, between Ma's putting up preserves and Pa's putting up hay.

For one thing, each—Pa, as well as Ma—attaches to his and her particular job the same prime importance, going about it with the same visible earnestness and at the same unyielding pace. What's more, each applies to the job the same meticulous care every step of the way—from the harvesting, to the preparing, to the final storing.

Ah, yes—the storing. Ma has her special equipment, of course, that helps her to speed through her job and make captive for the winter months the very most in the way of summer-grown flavor and nourishment. And naturally, Pa has his—a John Deere Baler, that makes an easy task of gathering, packaging, and preserving swiftly and economically the vitamins, minerals, and proteins that contribute so much to the building of flesh and bone in livestock and to the output of better animal products.

Which all goes to show what a difference a good bale makes. Incidentally, that John Deere Baler of Pa's—it's just one of a long line of John Deere Quality Farm Machines and Implements designed and destined to help him and farmers the country over to get the most from a generous earth.

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MA 4-58

CLIMAX MOLYBDENUM

Coming–Better Fungicides

By Carl E. Seliskar
Colorado A & M College

● MANY OF THE OLDER fungicides, such as Bordeaux mixture and lime-sulfur, which have come to be regarded as standards in the field of disease control, are now rapidly being replaced by new and radically different materials.

Carl Seliskar

Noteworthy in this progress is the recent development of interest among scientists in the use of antibiotics for the control of plant disease. Since the isolation of penicillin in 1941 from the fungus, *Penicillium notatum,* many kinds of antibiotics have been obtained from fungi and related organisms.

Antibiotics Are Useful

Antibiotics are materials synthesized by microorganisms which have the property of inhibiting or destroying other organisms. In general, antibiotics are absorbed through the tissues and become systemic in the plant. To date, most of the antibiotics tested have been specific to bacterial pathogens. Antibiotics possessing both antibacterial and antifungal characteristics, however, have been isolated from some microorganisms, and a few have already been found useful in the control of fungus diseases of plants.

The discovery of antifungal antibiotics opens a new field of investigation in the search for more effective fungicides.

Fight Fire Blight

For many years the fire blight disease of pear and apple has been a source of serious loss to growers. No really practical control measures have been found.

But the picture is rapidly changing. Scientists at the Ohio Agricultural Experiment Station, for instance, have conducted large scale orchard tests to evaluate the use of antibiotics in the control of fire blight. Tests in 1953 on Jonathan apple showed that streptomycin applied at 120 ppm. in the early bloom, full bloom, and petal fall stages resulted in almost complete control of blight.

No twigs and only two percent of the blossom clusters were infected while 20 percent and 83 percent infection occurred on the twigs and blossoms of the non-treated checks.

At the same station in 1954, numerous tests with various streptomycin formulations at 100 ppm. on pear and apple applied three times during the bloom period provided excellent control.

Product Soon Available

Results have been so successful that antibiotics will likely be recommended for fire blight control in some states in 1955. Streptomycin formulations are expected to be made available for commercial use next spring at a price low enough to warrant their use in fire blight control.

Antibiotics are being tested for possible use in the control of other plant diseases, as well. Thus, U.S. Department of Agriculture workers report control of halo blight of beans with streptomycin at 500 ppm. if applied shortly after the appearance of symptoms. In California, good control of walnut blight under commercial orchard conditions was obtained with applications of streptomycin sulfate resin dust.

Tests in Delaware indicate that three applications of streptomycin at 500 ppm. will control bacterial leaf spot of tomato and peppers in tests conducted by the Florida Agricultural Experiment Station.

Dip Potato Pieces

Plant pathologists at the Maine Experiment Station have found complete control of bacterial soft rot and black leg of potato seed pieces with 30-minute dip treatments in solutions of streptomycin sulfate.

Streptomycin at 100-200 ppm. was more effective in controlling tobacco blue mold than standard fungicides in trials conducted by U.S. Department of Agriculture scientists. These researchers have also found a marked reduction of spoilage in packaged spinach treated with a streptomycin bath.

Promising tests with antibiotics are under way to increase the viability of barley sprouted for malt in beer production, permitting increased storage periods and the use of less expensive barleys.

While all the diseases thus far discussed are of a bacterial nature, antibiotics having both antifungal and antibacterial properties are now undergoing tests for the control of certain fungus diseases.

Wisconsin workers report tests effective in controlling seed-borne grain pathogens with helixin, toximycin, and antimycin. Cyclohexamide also appears to have potential value as a seed treatment in the control of covered smuts of barley and oats. Wisconsin scientists obtained field control of these diseases with four-hour dip treatments. Complete control of Fusarium wilt of tomato with thiolution has been reported.

Rockefeller scientists have found that thiouracil, a synthetic compound, may be of value in the control of certain virus diseases. Preventive and curative affects were noted with hypersensitive type tobacco plants affected with mosaic.

Additives Give Results

Research workers in Missouri have found that when certain plant growth regulators, such as indoleacetic acid, are added to some antibiotics the inhibitory properties of the antibiotics are enhanced, thereby increasing the degree of control. Additives of this kind could have an important practical application in the future use of antibiotics.

Recent advances in fungicide development have not been restricted to antibiotics alone. Considerable effort is being devoted to the testing of other types of systemically active materials. Only a few are well-known while others are currently undergoing tests.

For example, the control of stem rust of cereals has never been considered practical, although sulfur dust is known to be an effective rusticide. The high cost involved due to the number of applications required mitigate against its use.

Control Stem Rust

Plant pathologists in Nebraska, however, have found that calcium sulfamate acts systemically in the plant, arresting the development of new rust infections as well as eradicating existing pustules. As a result of extensive field tests, it was concluded that one or possibly two aerial applications of the material should be adequate and practical for the control of stem rust.

Work performed at the Connecticut Experiment Station in the use of fungicides for the control of the Dutch elm disease is well known. However, the same materials, oxyquinoline benzoate and oxyquinoline sulfate, show promise in the control of the serious

Safety Uniform

A canister-type gas mask protects the wearer during mixing or other handling of insecticides. This is an industrial-type canister gas mask, developed by Mine Safety Appliances Company, Pittsburgh, Pa. More information concerning this safety mask is available from the company.

oak wilt disease. In some tests conducted in Iowa, as many as 75 percent of the infected trees recovered following treatment.

Control Cucumber Scab

Oxyquinoline benzoate is also reported to be partially effective in the control of Phytophthora root rot of avocado in California. Investigations in Connecticut indicate that maleic hydrazide, a weed-killer, may have value as a fungicide in the control of cucumber scab.

The development of the slurry method of seed treatment has resulted in greater protection of some smooth-coated seeds than formerly obtained with dusts. Some of the recent chemicals now approved for use as dusts or slurries include Agrox, Mergamma, Anticarie, and Tritisan. Other seed-treatment materials such as Spergon, Phygon, Arasan, Copper Carbonate, and basic Copper Sulfate may also be applied either as slurries or dusts.

Use Wet Treatment

In addition, a wet treatment with concentrated liquid fungicides has found favor in the treatment of cereal grains and other seeds. Materials used in the wet treatment are usually volatile and do not leave a dust residue on the seed as in the slurry method. Most of the fungicides of this type, however, can be used as slurries if diluted. Panogen, Mema, Merculine, Merlane, and Setrete (also called Gytrete, Pentrete, and Gal-

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lotox) are among those undergoing extensive tests at various State Experiment Stations.

Some of these chemicals appear to be unusually effective in the control of certain seed-borne diseases when applied in wet or slurry form. Thus, workers at Colorado A & M Experiment Station found that the Merculine, Merlane, and Panogen applied as liquid seed treatments gave almost complete control of barley stripe.

Many Fungi Killed

Ceresan M was also effective in these tests but required more careful handling to prevent seed injury. At the same station, Phygon and DuPont 244 applied as slurries, were the only materials of many to control sorghum covered smut on hull-type varieties.

In tests conducted in 1954, Panogen was also found by these workers to provide almost complete control of seed and soil-borne stinking smut of wheat. Over a period of several years, Maneb, in dust or slurry form has been the outstanding seed treatment material for the control of black rot of sugar beets at this station.

Extensive field tests in the Northwest showed that EMTS in dust and spray form is effective in the control of snow mold of wheat. EMTS (Ceresan M) applied in early November in dust form at five pounds per acre and as a spray (Ceresan M-2X) at two and one half pounds per acre gave almost 100 percent control under the most severe disease conditions. No phytotoxicity was observed in these tests.

Smog Injures Plants

A new application of fungicides has been found by California pathologists for the prevention of plant injury due to smog (ozanated olefin). Their experiments showed that plants can be protected with the dusts of Zineb, Ferbam, Ziram, Maneb, and Thiram, when in concentrations of not less than 10 percent active material. Adequate coverage of both leaf surfaces was required for good protection. Sprays were also effective.

Although many of the tests reported herein have not been carried beyond the experimental stage, it seems likely that some of them will have practical application in the near future. The vast number of new chemicals being tested for their fungicidal value, combined with the intensive research underway on the more fundamental phases of plant disease control, points, indeed, to more effective and less costly plant disease control methods in the future. —*End*

Officers of the South Dakota County Agents' Association elected at the annual conference in October were, l-r: Myron Barber, Yankton county, secretary-treasurer; Kenneth Leslie, Butte county, president; R. B. Kelton, McCook county, vice president; and Douglas Wallace, Faulk county, sergeant-at-arms.

★

Publish Poultry Booklet

"Find Your Career in the Poultry Industry" is the title of a 48-page booklet just published by the Poultry Science Association. It is designed to interest young people in planning a career in some phase of the poultry industry.

It tells of the employment opportunities and training required in such phases of the industry as teaching, research, feed manufacturing and sales, processing and marketing, poultry breeding and hatchery operation, veterinary service, and journalism.

Prospective students of poultry husbandry probably can get a copy through the Department of Poultry Husbandry in each state agricultural college. Copies may be purchased from Interstate Publishers, Danville, Ill., at the following prices: 25 cents per copy (paper cover) and 75 cents per copy (in stiff binding). Special prices are available on quantity orders.

★

At the recent County Agents' Convention in Salt Lake City, the Illinois delegation paused in mid-morning for "apple" refreshments, courtesy of the state of Michigan. Left to right: J. R. Strubinger, Laverne Jennie, Kenneth R. Imig, Carl F. Mees, O. O. Mowery, H. V. Deffenbaugh, T. W. May, Ralph Poynter, J. B. Turner, and Albert Pilch.

Identify–then Kill Weeds

By W. G. Westmoreland
Extension Weed Specialist
North Carolina State College

● THE TERM "NEW" can be applied to much of the field of herbicides or "weed killers." Only a few years ago we looked with wonder on such chemicals as sodium chlorate and marveled at the job of weed control they produced.

W. G. Westmoreland

Now with the introduction of some new chemical compounds, and reasonably simple machines for their application, literally millions of acres of previously time-consuming, expensive weed control jobs are being done rapidly and often at a saving.

First Identify Weeds

More important than ever for any sound program of controlling weeds is the correct identification of your problem weeds. The use of new selective herbicides can lead to very good practical control of one specie of plant and no control of another specie which is very closely related botanically.

Many common names can apply to one plant or the same common name might be used for several widely different species. It has been estimated that more than 100 different grasses in the United States are called "wire-grass".

Botanists, agronomists, and horticulturists in land grant colleges will be glad to help identify your pest plants. Collect samples which have roots, stems, leaves, and flowers or fruit. Proper identification can be one-half of the job of "licking" the weed.

Improve 2,4-D Esters

Our old friend (2,4-D) continues to appear in new forms. Certain esters, such as the isopropyl ester, continue to be satisfactory in some cases. Where the use of this volatile product is questioned even slightly, water-soluble amine salts should be used.

The range of uses of amine salts of 2,4-D has been increased in some cases by utilizing new wetting agents or spreader-stickers. New "low-volatile" esters of 2,4-D are available.

Three such materials are capryl esters, propylene glycol butyl ether ester, and butoxyethanol ester. All of these are a little safer to use particularly during spring and fall months when temperatures are low.

Some volatility may be expected with high temperatures of late spring, summer and early fall. Some formulations of still lower volatility may be expected in the future. These newer materials are usually more costly but possess the general effectiveness of an ester with an added safety feature.

New Cotton Weed-Killers

Cotton farmers are finding the use of pre-emergence chemicals worthwhile in the Southeastern and Delta states. Since 1952 CIPC has done a very good grass control job under a wide range of soil and climatic conditions. It was used mostly as a band over the drilled row at planting time.

A new compound, "Karmex" DL, was used in 1954 on a limited acreage with generally fair results. This chemical, considered a good seedling grass killer, appears to have promise on clay soils. Certain broadleaf weeds continue to be problems following the use of either of these compounds.

Perennial pests such as Bermuda grass, Johnson grass and trumpet vine will not be controlled with either chemical at suggested rates. Herbicides on cotton look most promising for the "particular" farmer whose main problem is much seedling grass and little hoe-labor.

Chemicals Control Grass

A new herbicide that has been used on a limited basis is "Dalapon". It continues to show promise for the control of grasses in the seedling stage. Rates are expected to be much lower than has been necessary with compounds such as sodium TCA.

"Amizol", another chemical still considered experimental, shows considerable promise. It is one of a relatively new group of compounds which defoliates, suppresses regrowth and suppresses chlorophyll formation in the regrowth. This compound is being tested for possibilities as a defoliant as well as a herbicide.

The introduction of "boomless" sprayers has created many questions in the farmer's mind. He should remember that it is necessary to get an even spreading of herbicides. He knows it is also necessary that the crop plants be extremely tolerant to the herbicide for it to be sprayed over the top of the crop. These two points will probably have more bearing on his use of this piece of equipment than most other questions.

Large drops travel to the outer edge of this spray pattern and finer, smaller droplets are directed near the nozzle tip. From the volume standpoint, distribution is reasonably good. The sprayer pattern is not affected as much by air movements as first believed. Gusty winds will continue to make uniform spraying practically impossibly.

This unit will probably be usable and reasonably satisfactory for herbicide application to close-drilled, tolerant crops—such as 2,4-D on pastures and small grain. Other crops and herbicides with which this machine can be used will probably follow in years to come.

2,4-D May Hurt Corn

Growth conditions just before and at the time of herbicide application may help explain the injury that 2,4-D causes corn. It has been realized that certain susceptible weeds are killed easily when treated during or following a period of vigorous growth. Have you attempted to connect injury to your corn to the same conditions?

Recent controlled physiological studies indicate that conditions just prior to and during the treating period may be the key to corn injury from 2,4-D. If soil moisture is good and temperatures are 80° F or more, injury can be severe. Under dry soil conditions or low temperature conditions or a combination of both, the corn is not so susceptible to injury from 2,4-D.

Control Weeds and Fertilize

A combination of old and new shows promise in the Southern states. The toxicity of high concentrations of salt solutions have been long recognized. These solutions could not be made practical and dependable. Now the addition of a wetting agent and low concentrations of low-volatile esters to commercial ammonium nitrate solutions have changed the story.

Directed sprays of ammonium nitrate-wetting agent 2,4-D ester solution have controlled small grass seedlings and broadleaved weeds in 15 to 30 inch corn. The process applies a spray which puts down nitrogen top-dressing and kills weeds at one trip across the field. There is much work to be done to perfect this particular procedure.—*End*

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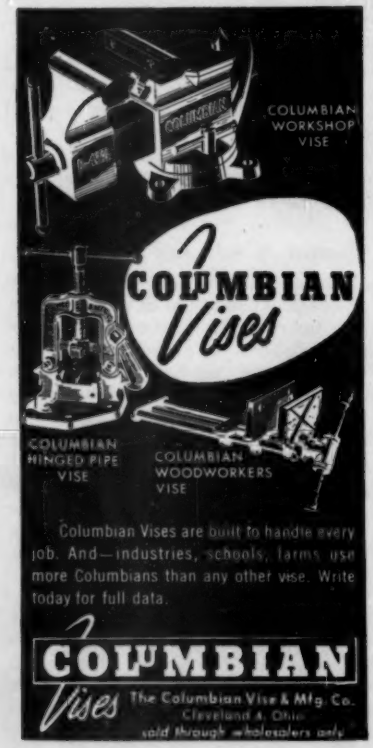
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What's New in Defoliants

Shed Those Cotton Leaves

By Wesley Chaffin

Extension Agronomist
Oklahoma A & M College

● CHEMICAL DEFOLIATION of cotton is recognized as an essential part of mechanized production. It is widely used throughout the Cotton Belt as an aid in conditioning the crop for earlier and better harvesting.

Defoliation hastens the drying and opening of mature bolls and makes possible an earlier harvest of a larger portion of the crop with a better grade. In some areas it reduces rotting of the lower bolls, particularly in rank cotton.

Removal of leaves increases the efficiency of mechanical harvesters and reduces the amount of trash in the harvested cotton. Stripper harvesters operate much more efficiently when cotton has been defoliated.

Better grades from handpicking, and especially from mechanical harvesting, usually result from defoliation because green leaves and stems are more difficult to remove than dry plant material. In many instances improvement in grade alone has more than paid the cost of leaf removal.

Gives Insect Control

Defoliation is also useful in controlling cotton insects. The removal of leaves often aids in reducing late populations of harmful insects, such as aphids, leafworms, boll weevils, bollworms, and pink bollworms. Since defoliation speeds up maturing and harvesting of the cotton crop, stalks can be destroyed earlier. This is especially important in boll weevil and pink bollworm control.

It should be pointed out, however, that defoliation has been most valuable in seasons when conditions were favorable for plant growth. Less favorable results have been obtained in dry seasons when plant growth was limited, and in areas where the growth season is relatively short.

Proper timing of the application is perhaps the most important factor in determining how much benefit the grower will receive from defoliation. In deciding when to defoliate, condition of the plants, moisture relationships, temperature, rainfall, wind velocity, and state of maturity of the plants and bolls must be considered.

Defoliants are of two types: dusts and sprays. With respect to their effect on plant tissues, they are divided into desiccants and defoliants. A desiccant kills the plants, stops all growth, and may remove a high percentage of the leaves. A true defoliant removes the leaves but does not kill the plants.

A rather large number of chemical defoliants and desiccants have been tested, and many have given results varying from fair to excellent. Some defoliants have given good results over a wide range of conditions, while others have proved to be more limited in adaptation. Growers should obtain specific recommendations from authoritative sources in their respective states.

Some Defoliants Need Dew

For calcium cyanamide dust, a dew or mist is necessary. It is an excellent defoliant, especially for use in rank cotton with dense foliage. Dew or surface moisture is not necessary for monosodium cyanamide dust, since it absorbs moisture from the leaves or from the air as humidity rises. Best results are obtained, however, when the leaves contain ample moisture or humidity is moderately high following the application. Dusts have been the most dependable defoliants in the southeastern states.

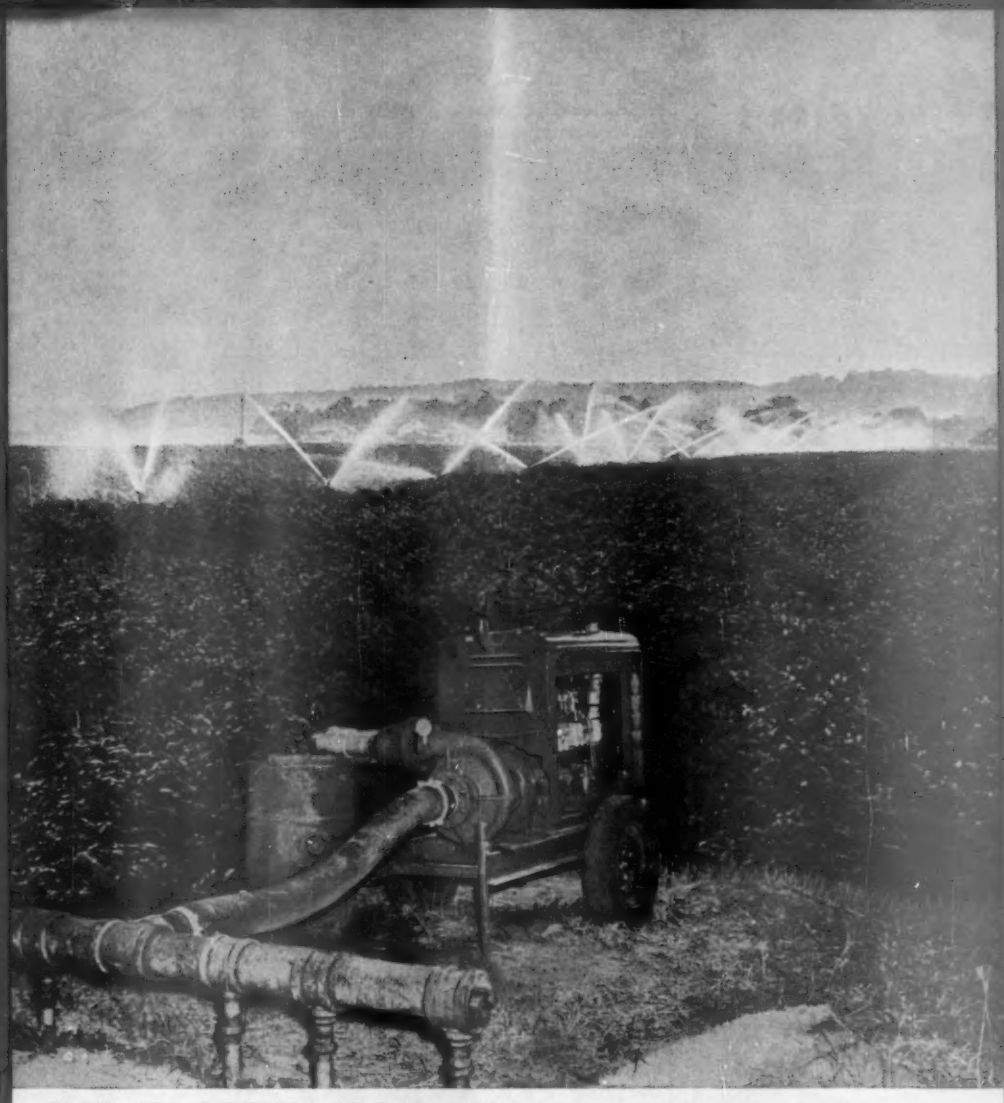
Spray defoliants may be used under both humid and arid conditions. Dew is not necessary, but more satisfactory results are obtained when there is at least a reasonable amount of moisture in the leaves. If leaf moisture is very low and leaf tissues are tough, defoliation will be more difficult and rates of application must be increased.

New Ones Show Promise

Among the new defoliants, amino triazol has given excellent results, particularly when applied on mature leaves. Research studies indicate that it may be more effective than any other chemical in controlling regrowth. At several locations in Texas, high dosages dropped up to 85 percent of the leaves and inhibited regrowth at least one month.

When mixed with other defoliants it has, in many instances, increased their effectiveness in leaf removal. In the Mississippi Delta, amino triazol showed less tendency to control regrowth at lower rates of application, but was found to be superior to certain other defoliants in that region.

A new chemical known as NP-1098



OVER 400 BUSHELS OF POTATOES PER ACRE—that's the record set by practically every truck farm last year in Suffolk County, Long Island, during one of the worst droughts in history of the area. Portable sprinkler irrigation was the answer to double the normal yield. With a Marlow Centrifugal Pump as the heart of the system, operating at high efficiency and at low cost, both fields and crops were kept *green and productive throughout the entire growing season.*

marlows do the job better!

Marlow Irrigation Pumps are engineered and built specifically for sprinkler irrigation service, that's why Marlows combine top performance with economy and easy, trouble-free operation. Marlow makes a broad range of models to meet every sprinkler irrigation requirement. A wide choice of power units is available, including electric motors, gasoline, L.P.G. or diesel engines. See your Marlow dealer today or write for Bulletin SI-53.

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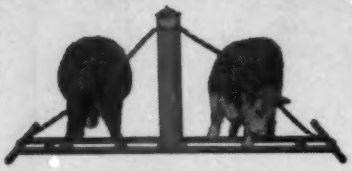

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141 W. Jackson Blvd., Chicago 4

Coming in February
Grassland Farming Section

has shown promise as a spray defoliant for rank, leafy cotton in high rainfall areas. It gave excellent results in tests conducted in South Carolina.

Use Where Rainfall Low

Phillips 713D shows promise as a defoliant for use in low rainfall areas where the leaves are often tough and difficult to remove. In field demonstrations and Oklahoma Experiment Station tests, it has removed 60 percent to as high as 97 percent of the leaves. Excellent results have also been reported in Texas.

Sodium ethyl xanthate (SEX) gave good results in some parts of Texas in 1953, but it does not seem to be as well adapted to varying conditions as some other materials.

The chlorate defoliants, both the chlorate-borate mixtures and the magnesium formulations, have given good results when conditions were favorable, and their use is increasing.

These Desiccants Are Good

The pentachlorophenol formulations are still recognized as being among the most effective desiccants. They are especially useful on stormproof and storm-resistant varieties where the chemical is applied after the plants and bolls are mature. Pentachlorophenol is used extensively in Oklahoma and in some other areas.

Endothal is widely used and is regarded as one of the best defoliants, particularly in low rainfall areas. The Texas Station reports that Endothal "gave the most rapid and possibly the most desirable type of defoliation in the group of spray materials" used in 1952. In comparison with other defoliants, it was particularly effective on cotton grown under conditions of limited moisture. Endothal has also given good results in Oklahoma. In some areas, however, it seems to be very sensitive to plant and weather conditions.

Alphenol has given fairly good results in Oklahoma; however, when applied on rank cotton in the Mississippi Delta, it has been less effective than some other defoliants.

Complete Coverage Essential

In applying defoliants, complete coverage of all leaves is necessary for their removal.

Application of dusts can be satisfactorily made with available machines—ground or air-borne—used in dusting cotton for control of insects, or for application of herbicides in weed and brush control.

Airplanes for application of defoliants are generally more satisfactory than ground equipment in tall, rank cotton. Good coverage of medium to small-sized cotton plants (not more than five feet tall) can be made with ground machines by shielding the tractor and sprayer, and by using at least five nozzles to each row. The U-shaped booms or boom drops between the rows will give more uniform coverage and make possible a better job of defoliation.

Shields should be used on the tractor wheels to minimize damage to the cotton plants. Shielding of the boom drops will prevent the leaves from coming in direct contact with the spray nozzles and thus break the spray pattern.—*End*

★

Sell Hormone Premix

Eli Lilly and Company, Indianapolis pharmaceutical firm, has been given permission for the manufacture and sale of a synthetic hormone premix which is added to feed formulas to stimulate the growth of fattening cattle.

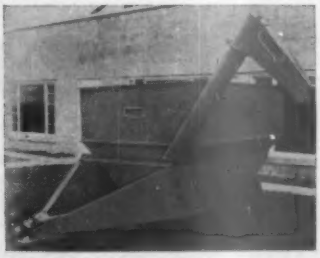
Because it is a powerful drug, this synthetic compound, diethylstilbestrol, may not be mixed directly with cattle feeds but must be added to feed formulas in a premix which contains it in scientific distribution.

The new product will be sold under the name STILBOSOL, which is the trade name for Lily diethylstilbestrol premix. STILBOSOL will be sold only to feed manufacturers for inclusion in beef fattening supplements.

The company has been licensed to make and market the premix under an application for a patent by the Iowa State College Research Foundation at Ames. Iowa State scientists in animal husbandry discovered the effectiveness of diethylstilbestrol in cattle feeding in a series of controlled experiments.

★

Front Unloader



A new front unloading auger box has been announced by the Helix Corporation, Crown Point, Ind. It can be used for a variety of farm jobs, and has a capacity of 83 bushels. Write the Helix Corporation for more information.

THE WINNERS—The six winners of college scholarships awarded at the 1953 National 4-H contest are pictured left to right: Rebecca J. Hutto, Indiana; Clark Schartz, Kansas; Glen E. Odglen, Arkansas; Charles N. Turner, Rhode Island; John Howard Perry, Oklahoma; Mary Christensen, Wyoming.

GOLD MEDAL—County winners in the 1955 Entomology Program will be wearing this handsome 14-carat gold-filled medal.

1955 ENTOMOLOGY PROGRAM INCLUDES SIX COLLEGE SCHOLARSHIP AWARDS

Sponsored by Hercules Powder Company—the producer of technical toxaphene for agricultural insecticides—the 1955 National 4-H Entomology Awards Program will offer awards ranging from gold-filled medals on the county level to college scholarships for the six national winners.

The program is open to all eligible 4-H boys and girls and the following awards await the winners:

County: gold-filled medals.

State: 17-jewel wrist watch.

Sectional: 12 trips to the '55 National 4-H Congress.

National: 6 college scholarships of $300 each.

Complete information on the Entomology Program is available now from your County Extension Agent, or 4-H leader.

Naval Stores Department
HERCULES POWDER COMPANY
INCORPORATED
905 King Street, Wilmington 99, Delaware

NX54-29

Pfizer Finds Feed Factor

A new substance produced by fermentation is reported to increase the growth of swine and poultry even beyond the remarkable gains in animal nutrition previously achieved with antibiotics and Vitamin B12.

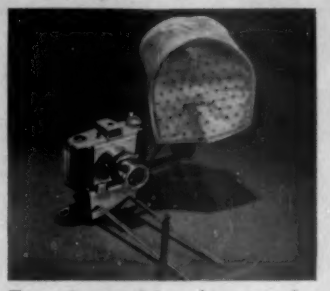
Scientists of the Pfizer Agricultural Research and Development Division, Terre Haute, Ind., state that the unidentified substance—called *The Vigo Factor*—when added to a basic ration containing antibiotics produced up to 15 percent greater gains in pigs than when the pigs were fed the best practical ration. Other scientists have also reported similar gains for chickens.

A way has been found to produce *The Vigo Factor* commercially on a limited scale today, according to J. J. Thompson, director of the Agricultural Sales Division, Chas. Pfizer & Company, Brooklyn, N.Y.

"As rapidly as possible we will get this growth promoter to the farmers of the United States through the feed manufacturers," Thompson promised.

Almost four years of research by Pfizer scientists went into developing a concentration of the factor which has proved that it can both reduce the time it takes to raise a pig or chicken and the amount of feed required. This means greater production at less cost to the farmer.

Close-Up Attachment



To make precision close-up color photography considerably easier, the Eastman Kodak Company, Rochester 4, N. Y., has announced a newly developed technical close-up attachment. It comes in two forms, and designed for use by anyone who wants to produce color photographic transparencies of good quality. Write to Eastman for more information.

★

Turkeys Hatch at High Altitudes

Back in 1949, turkey hatching eggs from some of the country's outstanding breeders would only hatch about 20 percent at high altitudes. Now, the Wyoming Experiment Station has developed a strain of Broad Breasted Bronze turkeys whose eggs will hatch as well in the mountain states as other good strains hatch at low altitudes. In 1954, they received a hatchability of about 66 percent.

★

Next: A Paper Mulch

Workers at Michigan State College have been experimenting with a paper mulch to control weeds and help hold soil moisture.

Researchers at the college are making a paper mulch out of old newspapers and applying it to the soil about a quarter of an inch thick.

It can be sprayed on and has been found to work on several crops, including tomatoes, corn, beans, and even evergreen trees.

★

Good Bulls Have Fast Heart Beat

Experiments conducted at Oregon State College have shown a relationship between the speed of a young bull's heart beat and the ability to make quick, economical gains in weight. The faster the heart beat, the better the gaining ability.

★

Tact is the ability to give a person a shot in the arm without letting him feel the needle.

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In serious, acute infections, immediate blood levels of penicillin in the animal followed by lower but long-lasting levels, are desirable. Injection Bicillin Fortified gives both in a single injection. Bicillin Fortified is most useful when you want to give a sick animal treatment that is effective immediately and then continues for a long period of time—without disturbing the animal by repeated injections.

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50 cc. vials of 150,000 units Bicillin and 150,000 units procaine penicillin per cc. The same formula is also supplied in a 10 cc. vial.

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Helpful BOOKLETS

AG CHEMICALS

215—What About Cyanamid?

You may need this latest information on the use of cyanamid in plant beds and for weed control. The American Cyanamid Company has such material available for you.

A—Control Weeds in Plant Beds
B—Aero Cyanamid—How to Use It
C—Aero Cyanamid Weedkiller

On the postal card
CIRCLE 215A, 215B, 215C

216—Don't Tolerate Weeds

With all the new chemicals there are today, no one should be lax in getting rid of weeds. Here are booklets by the Chipman Chemical Company that will give you much information on weed control.

A—You Can't Argue with Weeds
B—Atlacide, Chlorate Weed Killer
C—Defoliate Cotton with Shed-A-Leaf
D—More Cotton Per Acre
E—Pre-Emergence Weed Control in Cotton

On the postal card
CIRCLE 216A, 216B, 216C, 216D, 216E

217—Ortho Isotox Chemicals

The California Spray-Chemical Company produces a number of chemicals that are used in the agricultural field. Here are five of their booklets that you will find of help and interest.

A—Isotox Transplanter Solution
B—Isotox Seed Treater
C—Tag Fungicide
D—Ortho Fly Killer M
E—Orthocide Seed Protectant

On the postal card
CIRCLE 217A, 217B, 217C, 217D, 217E

218—Protect Farm Seeds

Chemicals today will protect farm seeds after they are planted in the earth. United States Rubber Company has several pamphlets available that help to explain how this is done.

A—Treat Soybeans with Spergon
B—Use Thiram 50 Dust
C—Phygon Seed Protectant
D—Spergon for Crop Insurance

On the postal card
CIRCLE 218A, 218B, 218C, 218D

All Booklets Listed in this section are

FREE!

These booklets are available from these individual companies and will be of help to you in your work of training and advising farm people.

219—Toxaphene—Insects Beware

The chemical Toxaphene spells death to a great number of insects. Here are five booklets by the Hercules Powder Company that explain the use of Toxaphene against a variety of insects.

A—Kill Grasshoppers with Toxaphene
B—Cotton Insects
C—Toxaphene Kills Cutworms
D—Death of a Boll Weevil
E—Seed, Forage Insect Pests

On the postal card
CIRCLE 219A, 219B, 219C, 219D, 219E

220—Brush Control Is Easy

Yes it is, if you use the right chemical in the right proportion. Some of these booklets by the Dow Chemical Company will tell you how to best advise farmers to rid their farm land of brush.

A—Weed and Brush Control
B—Control of Mesquite
C—Roadside Weed Control
D—Brush Control on the Farm
E—Esteron 99—A New Weed Killer

On the postal card
CIRCLE 220A, 220B, 220C, 220D, 220E

221—The Aldrin-Dieldrin Twins

These two chemicals have been responsible for millions of insects going to their "happy hunting grounds." Here are booklets from the Shell Chemical Corporation that will add to your knowledge of these insecticides.

A—Aldrin for Corn Rootworm
B—Aldrin for Peanut Insects
C—Dieldrin for Alfalfa Weevil
D—Kill Ants with Dieldrin
E—Aldrin Seed Treatment

On the postal card
CIRCLE 221A, 221B, 221C, 221D, 221E

222—A Chemical Variety

Here are four booklets by the Thompson-Hayward Chemical Company that cover a variety of chemical applications on the farm. Two important pests, rats and weeds, are stopped by chemicals.

A—Rat-Trol
B—Ded-Weed Products
C—Term-I-Trol
D—Sodium Arsenite Solution

On the postal card
CIRCLE 222A, 222B, 222C, 222D

223—Hurrah for Heptachlor

This is one of the newer chemicals that is used in a great variety of ways for farm insect control. These booklets by the Velsicol Corporation explain in detail how this chemical can be used.

A—Heptachlor Formations
B—Heptachlor for Mosquitoes
C—Heptachlor for Spittlebugs
D—Heptachlor for Alfalfa Weevil
E—Heptachlor for Wireworm Control

On the postal card
CIRCLE 223A, 223B, 223C, 223D, 223E

ANIMAL HEALTH

224—Poultry Vaccine

The American Scientific Labs, makers of many poultry products, have several booklets explaining how some of them can be used to profitable advantage by poultrymen. Three of these booklets are listed below, and they can be yours.

A—Prevent Newcastle Disease
B—How to Prevent Pox, Tracheitis
C—Use Stil-Capo Caponizer

On the postal card
CIRCLE 224A, 224B, 224C

225—Value of Aureomycin

Antibiotics are popular today in feeding and disease control. To help you understand better the role of Aureomycin in livestock and poultry production, the American Cyanamid Company has prepared several informative booklets. Also included are two booklets on Coccidiosis and its control. All are available to you.

A—Feed Aureomycin for Profit
B—Aureomycin in Ruminant Feeding
C—New Feeding Method Heads Off Disease
D—The Coccidiosis Story
E—What to Know About Coccidiosis

On the postal card
CIRCLE 225A, 225B, 225C, 225D, 225E

226—Medicines Preserve Profits

Medicine can help to keep livestock healthy, and this is necessary for profit. Dr. Salsbury's Labs will send you two booklets, one on hogs and the other one explaining their biologics that are available from their labs.

A—Make More Money from Hogs
B—Biologics Booklet

On the postal card
CIRCLE 226A, 226B

One Card for You . . .
. . . and an Extra One!

In each issue of Better Farming Methods you will find duplicate postpaid postal cards. Each card has printed a complete numbered listing of material. Each number refers to a specific booklet or booklets reviewed in this issue of the magazine.

One card is for your use—the other one you may want to pass along to some other agricultural leader in your office.

Use the cards each month. Remember, no booklet listings are repeated from the previous month.

BREED ASSOCIATIONS

227—Angus in Pictures

Aberdeen-Angus are popular beef cattle, and the Angus Association has a set of pictures that might be of interest to you for classroom and office use. In addition, several other books are available for distribution.

A—A Set of Pictures
B—Cattle Raising at Its Best
C—How to Register Angus

On the postal card
CIRCLE 227A, 227B, 227C

228—Are You A Chick?

No, perhaps not. But if you were, you would want to have your owner give you the best management. And, Hy-Line Poultry Farms have several booklets that give excellent management hints for successful poultry raising. Why not circle the number so that you can receive your copy soon?

A—If You Were A Chicken
B—The Hy-Line Breeding Story
C—Hy-Line Catalog

On the postal card
CIRCLE 228A, 228B, 228C

229—Get Your Chirps

Chirps is a bimonthly service magazine of the Nichols Poultry Farm, Inc. They would be glad to send you one, along with several more of their booklets.

A—*Chirps* magazine
B—Guide for Hatching Egg Producers
C—Nichol's Catalog

On the postal card
CIRCLE 229A, 229B, 229C

BUILDINGS

230—Galvanizing Pays

The American Zinc Institute has three booklets they would like to send you on the value of galvanized roofing and how to protect it to give long service. These booklets are:

A—Make Galvanized Roofing Last Longer
B—Protect Galvanized Sheets
C—Directions for Laying Galvanized Roofing

On the postal card
CIRCLE 230A, 230B, 230C

231—Kaiser Aluminum Plans

The Kaiser Aluminum Company has an excellent farm building plans portfolio that they would like to send to you. In addition to this, there are several other colorful pamphlets that explain their products and how the farmer might benefit from them.

A—Farm Building Plans Portfolio
B—Roofing and Siding
C—Roofing Farm Guide

On the postal card
CIRCLE 231A, 231B, 231C

232—Creosote Means Life

The use of creosote on the farm promotes the length of life for many products. This is especially true when dealing with pole type farm buildings. Koppers Company, Inc., has two booklets available to you that will help explain the value of creosote.

A—Things you Should Know About Creosote
B—Pole Type Farm Buildings

On the postal card
CIRCLE 232A, 232B

CROPS

233—Corn Kernel Judging

Just looking at a kernel does not indicate its worth. A booklet from DeKalb Agricultural Association will tell you exactly what they mean by such a statement. Also, another general booklet on corn production is yours for your individual use.

A—Acres of Gold
B—Don't Judge a Kernel by Its Looks

On the postal card
CIRCLE 233A, 233B

234—Choosing Seed Corn

"What's the Best Seed Corn for You?" That's the title of a booklet available to you from Pfister Associated Growers, Inc. It is pocket-size, and contains excellent material on yield checking and seed corn selection.

On the postal card
CIRCLE 234

Don't Forget!
Sign your name and write your address on the card.

☆ NEW

Never the same—

238—Workshop Safety

Safety in the home workshop is the theme of a 48 page booklet called "Tips to the Handyman-Hobbyist on How to Do it Safely." A copy of this booklet is yours for the asking from the Home Insurance Company.

On the postal card
CIRCLE 238

239—New Tandem Disc

This wheel type tandem disc-harrow of the Tractor and Implement Division, Ford Motor Company, has a rated capacity of 40 acres in a 10-hour day. It has many features that will appeal to the farmer. You can have more information on this piece of equipment if you wish.

On the postal card
CIRCLE 239

Check these pages
EVERY MONTH!

No booklet listings are repeated from the previous month.

240—Drainage Booklet

The Portland Cement Association has just published a new booklet entitled "Concrete Tile for Farm Drainage." Helpful charts, pictures, and diagrams are included. Your copy awaits you.

On the postal card
CIRCLE 240

241—The Irrometer

What is it? A moisture indicator for irrigation control. A pamphlet on this new piece of equipment is available for your files from the T. W. Prosser Company. Circle the appropriate number today to get your copy.

On the postal card
CIRCLE 241

Booklets and Products ☆

Watch for the change—Every month!

242—A Shredder that Shreds

The New Idea Farm Equipment Company has introduced a new, sturdier stalk shredder which is designed to help farmers build up humus in the soil and make possible clean plowing. This company will send additional information.

On the postal card
CIRCLE 242

243—Destroy Water Weeds

Weeds are a problem in irrigation ditches, tile drains, and other places. Here is a product by the Autolene Lubricants Company, "Dead-X," that will kill such weeds. A booklet will give you complete information on this new product.

On the postal card
CIRCLE 243

244—Another New Harrow

This one a rigid-wheel, extra rugged model, by John Deere. It has many features that appeal to farmers. More information is yours so that you can help farmers know the features of such farm machinery that is available.

On the postal card
CIRCLE 244

How to Order Booklets

1. Clip out the postal service card.

2. Fill in your name, position, and address in the space provided.

3. Circle on the postal card the numbers of the booklets you want to receive.

4. Mail the card! It is self addressed and NO POSTAGE IS NECESSARY.

245—Rotten Fence Posts?

Not with Cona-Six Preservative. That is a new product of Fungitrol Chemicals Division, and their booklet will tell you all about the features of this product. It is safe, thrifty, and easy to us.

On the postal card
CIRCLE 245

246—Irrigation Catalog

"Portable Sprinkler Irrigation with McDowell Fittings" is the title of a catalog of the McDowell Manufacturing Company. It gives in detail form all the various couplings and fittings they have. Get a copy for your files today.

On the postal card
CIRCLE 246

247—Chop It Fast

From 22 tons of grass to 24 tons of corn can be harvested and chopped per hour in this forage harvester of New Holland's. With the importance of this type of farming enterprise, you will want information on this piece of machinery.

On the postal card
CIRCLE 247

248—Drill, Seed, Fertilize

Allis Chalmer's ALL-CROP combination drill, grass seeder, and fertilizer, which is tractor mounted, is now on the market. You and your farm people will be interested in additional information on this new equipment.

On the postal card
CIRCLE 248

FEED

235—High Level Feeding

Much is said these days about high level feeding of antibiotics. The Commercial Solvents Corporation has several booklets on this subject that will be of interest and help to you in your advisory work.

A—The Facts about Penline—200
B—Will Antibiotics Cure CRD?

On the postal card
CIRCLE 235A, 235B

236—Red Comb Programs

Hales & Hunter Company has a number of booklets available to you on their various feeding programs. Here are five booklets that may be of interest and help to you.

A—Broiler Program
B—Layer Program
C—Turkey Program
D—Duck Program
E—Rabbit Program

On the postal card
CIRCLE 236A, 236B, 236C, 236D, 236E

237—Terramycin Facts

Terramycin, widely used antibiotic, is increasing in importance every day. The Chas. Pfizer & Company recently issued four small pocket pamphlets on the application of Terramycin to farm disease problems. All of these are available to you.

A—Stop Poultry Diseases Fast
B—Stop Mastitis Fast
C—Effective Treatment for Pink Eye
D—Terramycin for Infectious Scours

On the postal card
CIRCLE 237A, 237B, 237C, 237D

249—Minerals in Feeding

The Murphey Products Company is interested in seeing that you know their findings on the value of minerals in animal and poultry feeding. Therefore, they have made available for you three booklets explaining this phase of feeding.

A—Poultry Feeder's Guide
B—Essentials of Good Feeding
C—Mineral Feeding

On the postal card
CIRCLE 249A, 249B, 249C

250—They Need Grit

Poultry needs grit in order to properly digest and assimilate its feed. The Stone Mountain Grit Company has prepared a number of booklets for your use, among which are the five following ones that will be of help to you in your office and classroom work.

A—Ag Leaders' Kit
B—Stonemo Hopper-Pak
C—What Brolier Growers Say About Grit
D—Wooden Grit Hopper
E—Metal Stonemo Feeder

On the postal card
CIRCLE 250A, 250B, 250C, 250D, 250E

FARM MACHINERY

251—Planet Jr. Equipment

Not all of these booklets apply specifically to agriculture, but the S. L. Allen Company believes that you will be interested in them. Several of them deal with their flexible sleds and racers.

A—Tractor and Power Unit
B—Planet Jr. Hand Tools
C—Planet Jr. Tuffy
D—Flexible Flyer
E—The Flexy Racer

On the postal card
CIRCLE 251A, 251B, 251C, 251D, 251E

252—John Deere Methods

Here are three booklets available to you from Deere & Company that will explain some of their methods in dealing with farm problems. All of these will not only be informative but will give you valuable reference material.

A—How to Fight Corn Borers
B—Harvesting—Feeding Hay, Silage
C—Terrace with Moldboard Plows

On the postal card
CIRCLE 252A, 252B, 252C

253—Caterpillar Farming

Caterpillar Tractor Company celebrates 50 years of track-type farming this year. They have a number of booklets available to you that explain how Caterpillars are used in farming to the advantage of the farmer. You will find these of valuable reference.

A—Power for the Fruit Grower
B—Power for Irrigated Farms
C—Saving in Citrus
D—Earn More, Save More
E—Orchard—Vineyard Tractors

On the postal card
CIRCLE 253A, 253B, 253C, 253D, 253E

254—Educational Inserts

All of the following educational inserts appeared in Better Farming Methods and were sponsored by the J. I. Case Company. Thousands of leaders have found them of value in teaching youth and advising adult farmers. Get one copy of each today. Additional ones can be requested directly from Case Company

A—How to Renovate a Pasture
B—Principles of Contour Farming
C—How to Build a Farm Pond
D—Guide to Grassland Farming
E—Forage Chopping and Storage

On the postal card
CIRCLE 254A, 254B, 254C, 254D, 254E

255—Agricultural Tools

International Harvester Company has a number of booklets that give some of the historical significance to developments in American agriculture. Following is a list of four of these booklets that will be of interest.

A—The Story of Twine
B—Working Tools of Agriculture
C—Make the Soil Productive
D—Man and the Soil

On the postal card
CIRCLE 255A, 255B, 255C, 255D

Don't Forget!

Each month we receive cards from readers of Better Farming Methods with no name and address. Before you mail your card, check and make sure you have given us your complete name and mailing address.

Don't Forget!

256—Use of Automatic Controls

No farm is complete today without knowledge of and profitable use of automatic controls. They are popular safety and labor saving workers for the farmer. The Minneapolis-Honeywell Company has several booklets that give you background information on this newer development in farming.

A—Automatic Controls for Crop Dryers
B—Farm Ventilating Systems
C—Improved Crop Storage with Controls

On the postal card
CIRCLE 256A, 256B, 256C

257—The M-M Tractors

To fully explain and illustrate the versatility of Minneapolis-Moline tractors, this company has provided you with some booklets that give the pertinent facts concerning this line of their machinery. They are yours for the asking.

A—BF Hi-Torque Tractor
B—New UB Tractor
C—New G Tractor
D—Self-Propelled Harvesters
E—Uni-Farmor

On the postal card
CIRCLE 257A, 257B, 257C, 257D, 257E

258—Diesel Is No Mystery

One of the features of the Sheppard Diesel tractor is the simplified fuel injection system that it uses. You will be amazed at the simplicity of this system and the ease with which it can be adjusted and maintained. The R. H. Sheppard Company has a pamphlet entitled "This Takes the Mystery Out of Diesel Power" that they would be glad to send you.

On the postal card
CIRCLE 258

FERTILIZERS

259—The Potash Story

Potash is one of the three basic fertilizers, and the American Potash Institute has prepared several booklets that will help tell the development and use of this popular plant food. They would be happy to send you copies of each.

A—Potash Fertilizer Needed on Many Farms
B—Development of Potash Industry
C—How Plant Nutrients Influence Growth

On the postal card
CIRCLE 259A, 259B, 259C

260—Nitrogen Gets Results

More and more nitrogen is being used in the agricultural industry for stimulating crop production. The Phillips Petroleum Company has a number of booklets on this important fertilizer, and each of them will add to your knowledge on this subject.

A—More Cotton Per Acre
B—More Corn Per Acre
C—More Sorghum Per Acre
D—Raise More Vegetables
E—Increase Crop Production

On the postal card
CIRCLE 260A, 260B, 260C, 260D, 260E

IRRIGATION

261—Sprinkler Facts

Three booklets are available to you from the Irrigation Equipment Company on the practice of sprinkler irrigation. They are:

A—Why Buy Ireco Sprinkler Irrigation
B—What Sprinkler Irrigation Offers
C—Speed-Tow Mobile Unit

On the postal card
CIRCLE 261A, 261B, 261C

262—The Skinner System

"Skinner System of Agricultural Sprinklers" is the title of a booklet from Skinner Irrigation Company. This is another application of sprinkler irrigation that may add to your reference on this subject.

On the postal card
CIRCLE 262

263—Gates and Flumes

The important parts of any irrigation system are the automatic gates and the measuring flumes. Perhaps you are not quite familiar with all of the kinds, and these two booklets from the Thompson Pipe & Steel Company will add to your store of knowledge on the subject.

A—Automatic Gate Booklet
B—Parshall Measuring Flumes

On the postal card
CIRCLE 263A, 263B

264—Pumps and Pumping

In many irrigation systems, a pump plays a very important part. "Fertile Fields, Yours for the Pumping" is the title of a booklet available to you from the Worthington Corporation. The importance of pumps and their operation in a successful irrigation system is explained.

On the postal card
CIRCLE 264

265—Earn FFA Money

Every vo-ag teacher is interested in having his FFA Chapter secure funds for Chapter activities. Here is an opportunity to sell subscriptions to three of America's leading poultry magazines and receive substantial commissions. Complete information is available.

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OK! We want to begin our fund-raising project right away. Please send complete information, sales kits and instructions . . . without obligation.

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School .....

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Number of FFA students in my class .....

Long and distinguished service in extension work brought these four men special recognition at the 40th annual conference of extension workers at Kansas State College. From left are C. R. Jaccard, economist in agricultural planning with more than 30 years in extension; Frank O. Blecha, who has been district agent since 1923; Lester Shepard, county agent in Neosho county from 1928 until his retirement in July; and Joe Goodwin, who served as a county agent in Jefferson, Atchison, Lyon, Linn and Morris counties between 1919 and 1953.

★

Lungworms in Cattle

Recent studies at Oklahoma A & M College indicate that phenothiazine in feed constitutes a more effective treatment of lungworms in cattle than any now available.

Two gram daily doses of phenothiazine in two pounds of pelleted feed successfully controlled lungworms in yearling calves without affecting palatibility of the feed or having toxic effects on the animals during a five-month feeding period.

★

IDEAS that WORK

Sample Shop Projects

For years I have carried out successful shop programs, not by using one certain idea but many, the best of which is having students fabricate farm items generally useful in the community, and placing them around in the shop for other boys to see.

The young fellows do not have the imagination for dreaming up things to make or repair, even with the help of books, so the items placed around will give them the idea. Furthermore, they realize the item is not so hard to build after all, and also they have a full scale, live pattern to follow.

We tack neat signs on these sample displays, stating the name of the article, who built it, time it took to complete, and cost.—F. B. Curry, Burton, Tex.

Do you have an idea that works? Better Farming Methods will pay a minimum of $5 for accepted ideas or teaching techniques that you have used successfully in YOUR work with FFA, 4-H, or farmers.

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"My livestock thrive on clean, fresh water. It's not giving them a fair shake to provide only muddy, stagnant water from a standing pond—or to make them crowd and push around an undersized tank.

"What I want is a nice-looking stock tank that's easy to drain and clean . . . one that's the right size . . . one that's built to last. And I want one that doesn't cost a mint of money."

If you've ever thought something like this, you'll be interested in Butler. Butler round and round-end stock tanks last a lifetime—yet are priced well within your budget. The 24-gauge sides and bottom are reinforced four ways to protect against crowding and pawing. They're easy to clean by draining and allowing sunlight to dry and destroy bacteria.

See your Butler Blue Ribbon dealer, or mail coupon, today, for more information on the full line of Butler stock tanks, sheep tanks, water-wagon tanks.

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Now—a superior rat and mouse bait containing PIVAL, the new highly effective poison that destroys rodents steadily, surely and painlessly over a period of several days as they eat and drink. This multiple feeding principle reduces the hazard to humans, livestock and domestic pets to an almost negligible minimum.

Donaco LIQUID BAIT
—containing PIVALYN, the water soluble sodium salt of PIVAL, destroys whole colonies of rats within ten to fourteen days. One packet of DONACO (in powder form) dissolved in a quart of water provides rodents with a tasty solution that is 10 times more acceptable to them than plain water. Freedom from mold growth and insect infestation guarantees continued acceptability for long periods.

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Donaco LIQUID BAIT DISPENSER
The only liquid dispenser designed specifically for rats and mice!

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Holds one quart of water and is used in the DONACO bait station, or separately. Small evaporation area assures long-term effectiveness without frequent refillings. Beyond a doubt, the most efficient, safest liquid bait dispenser ever developed.

Donaco DRY MEAL BAIT
—a cereal type bait highly acceptable to rodents. They prefer DONACO over the choicest natural foodstuffs and will continue to feed on it until they die. DONACO Dry Meal Bait retains its high palatability indefinitely—will not mold nor become a focal point for insect infestation.

3-lb. can—$2.00 postpaid

Donaco BAIT STATIONS
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Dealer inquiries invited · Write, wire or phone.

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Food and Water? Poison 'em Both

By E. H. Fisher
University of Wisconsin

● RATS AND MICE ARE OPTIONAL—you can either keep them or get rid of them with modern tools and practices. As a result, more successful rat and mouse control programs are being conducted each year. Individual responsibility in organized group action makes these programs click.

Of the several means for killing rats and mice, baits are best. Especially is this true since warfarin and pival became available. They are effective against both rats (the common Norway or brown rat) and mice.

No Bait Shyness

There's no bait shyness due to the poison, resistance by the rodents does not develop, and safety in use is as great or greater than with any other poison. Warfarin and pival are called anticoagulants—rats and mice bleed to death after eating enough at regular intervals.

Warfarin and pival are available in three forms: (1) There's a concentrate to be mixed with suitable bait food; (2) ready-mixed bait is ready to use; and (3) water-soluble preparations may be dissolved in water. Since rats and mice like food and water, we can now give them both with either a little warfarin or pival in them.

Where competition of stored grain or ground feed with cereal-poison bait has interfered with best rodent control, the additional use of water-soluble bait is recommended.

Place the cereal and water-soluble baits near each other—the rodent pests can then eat poisoned cereal bait, and thirstily lap up poisoned water close by. They slowly but surely die after a few daily feedings. But remember, water-soluble baits freeze, so their best use will be during above-freezing weather or in warm buildings.

Protect Bait Stations

Permanent or movable bait stations, placed in rat and mouse runways, provide the shadowed comfort for eating which these pests prefer. They also confine the bait, keeping it from children and domestic animals. And continuously-baited stations serve as a check on reinfestation.

With the advent of warfarin came new self-feeder stations, holding from one to 50 pounds of cereal-type bait. The smallest ones are for homes, those holding from a few up to 10 pounds for larger buildings, and the largest ones for dumps or similar areas.

Hints on Proper Use

Warfarin, the first "blood thirsty" killer of rats and mice publicly available, has been more greatly accepted during its four years of service to humanity than any other chemical rodenticide in history. But it's still new, because many people have not yet learned how to use it correctly.

Pival has been reported by the U. S. Fish and Wildlife Service to be very similar to warfarin for manner of use and in results.

Here's to success with anticoagulants:

1. Food, water, and shelter are necessary for rats and mice. Eliminate these naturally-occurring aids to rodent survival as much as possible.
2. Locate *all* rat and mouse runways and other active signs in *all* farm buildings.
3. Get enough bait for one pound at each rat runway. This requires 10 pounds for the average farm with some rat activity in several buildings.
4. Use something like discarded one-pound coffee cans as bait containers. Fill them level full. Use shallow containers like fruit jar lids for mice.
5. Place bait containers in rodent runways so they can't avoid them.

Keep Bait Cans Full

6. Inspect bait placements daily. *Keep some bait available in stations at all times.* Rats will not die before three days; good control usually occurs after two or more weeks.
7. Continue baiting to serve as a check on reinfestation.
8. If rats do not accept the bait, do one or more of the following:
   a. Place water next to bait if temperature is above freezing.
   b. Mix one tablespoonful of either vegetable oil, cod liver oil, mineral oil, or bacon grease to each pound of bait. Mix shortly before using or else bait may become rancid. Clean rancid bait from cans occasionally.
   c. Mix one tablespoonful of powdered sugar with each pound of bait.
   d. Purchase or mix fresh bait.
   e. Use a water-soluble preparation in addition to cereal bait.—*End*

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Controls Harmful Soil Insects, Diseases and Nematodes

High value crops—celery, beans, carrots, cucumbers, parsley, tobacco, etc., demand healthy root systems if they are to produce bumper crops. There's an effective way to assure better crops and bigger yields. Just fumigate the soil before planting with Niagara Soilfume. It contains the agent ethylene dibromide. Get rid of soil insects, disease and nematodes that limit your crops. Ask your supply dealer for details about Niagara Soilfume or write for our descriptive folder, entitled "Soil Fumigation Pays off with Soilfume."

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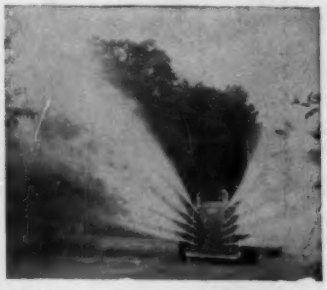

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HALE FIRE PUMP CO. CONSHOHOCKEN, PA.

Plant Food Supplies Reach Record Amounts

By Paul T. Truitt

President
American Plant Food Council, Inc.

● FARMERS IN 1955 are expected to use more fertilizer than at any time in history, for the principal reason that it will pay.

Production-wise, plant food supplies of the three primary plant nutrients are expected to be about five percent above the 1953 - 54 record. Barring unforeseen difficulties, the fertilizer industry in 1954-55 will set another new all-time production record for the 17th consecutive year.

Paul Truitt

In viewing fertilizer as a profitable investment, J. T. Brown, immediate past president of the National Association County Agricultural Agents, put it this way:

"County agents will tell you that production per acre can be increased to nearly twice our present levels if all farmers produced at the same rate as that of the most progressive farmers. So, despite the present cost-price squeeze and the problem of adequate food supplies for the future, there is a very logical way to produce more.

"This means doing a better job on our productive soils to lower the per unit cost. Efficient farming commands a premium regardless of marketing prices. On the majority of farms, the most efficient way of increasing the production of crops is by heavier applications of soil nutrients.

"We must apply commercial fertilizers to get the most out of the potential capability of a particular soil and to meet the particular crop requirement."

Feed Plants Like Animals

Robert Wall, as president of the National Vocational Agricultural Teachers Association, Incorporated, put it this way:

"Farming has become a big business, the competition is keen, and a thorough knowledge of feeding crops is essential to success. In studying vocational agriculture, the student learns that it is just as essential to properly feed plants as animals, that the greatest opportunity for cutting production cost lies in increasing the amount of fertilizers used on field crops and grasslands. By increasing the application of commercial fertilizer, we lower the unit cost."

Returns of from 3 to 15 dollars per dollar invested in fertilizer have been the major factor in the 400 percent increase in the use of fertilizers in the last 14 years. But new records in production and consumption do not minimize the fact that in virtually all areas of the United States farmers still are using only half as much fertilizer as their experiment stations say they could use and use profitably.

Efficient Farming Pays

There never was a higher premium on efficiency in farming than today. The diverted acres or control program means that farmers are challenged to produce more efficiently on fewer acres. Therefore, the efficient use of plant food in relation to other sound land management practices will mean lowering the per unit cost of production with benefits to farmers and consumers alike.

The fertilizer industry has kept pace with the requirements of farmers. In fact, manufacturers have given ample evidence of their faith in the future of farming in terms of expanding old facilities and building new plants to meet the increasing fertilizer needs of agriculture.

Bigger Nitrogen Supply

Let's take a look at the prospective supplies of the three major plant foods, based on United States Department of Agriculture figures:

For NITROGEN: In total, it appears the 1954-55 supply of nitrogen for agriculture will be about 2,200,000 tons, which is an increase of 8.9 percent over the amount available in the last crop year. This total will be split about 55 percent for dry, and 45 percent for wet nitrogen.

For PHOSPHATES: Available phosphoric oxide supplies for 1954-55 are forecast at 2,350,000 tons or at about the same level as the present

season. The estimate is based on present production, trends in consumption in recent years, and the assumption that import-export relationships will not vary substantially from the 1953-54 pattern. Deliveries of available phosphoric oxide was reported at approximately 2,364,000 tons or about 4 percent above the 1952-53 reported consumption.

Increase in Potash

For POTASH: Supplies of potash for fertilizer for 1954-55 are estimated at 1,970,000 tons, or an increase of about 7.6 percent above the 1,831,000 tons available in 1953-54.

Prices of Fertilizer: The United States Department of Agriculture reported that "prices of fertilizer are likely to remain unchanged" and adds that "prices . . . are lower than they were in 1940 relative to other prices paid as well as to prices received."—*End*

★

At the recent FFA Convention at Kansas City, 25 vo-ag teachers who received Honorary American Farmer degrees were the guests at a dinner given by Ford Motor Company. In addition to these honored teachers, all vo-ag teachers attending the convention were invited. Host at the dinner was Benson Ford, vice-president, Ford Motor Co., who is shown congratulating Ralph Foltz, vo-ag teacher, Bremen, O., and George Krill, vo-ag teacher, Ashland, O. (center).

★

Extension Becomes Independent

The New York State Farm Bureau Federation and the New York State Extension Service will become independent of each other on January 1, 1956.

At the annual meeting of the New York State Farm Bureau Federation official delegates voted to discontinue the legal relationship between the Farm Bureau and Extension Service which has existed under New York law for more than 40 years. The delegates, however, voted unanimously to support the new organization.

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Thousands of farmers from coast to coast are getting bigger yields of high quality crops by using fertilizers containing *soluble magnesium*. Magnesium is now so widely used that many farmers—and agricultural authorities, too—are calling it the fourth element in the fertilizer bag.

By far the most practical and effective way to supply needed magnesium is in soluble form in mixed fertilizer. That's why so many leading manufacturers regularly include *Sul-Po-Mag* in the fertilizer grades they make for a wide variety of crops grown on magnesium-deficient soils.

Sul-Po-Mag, produced only by the *Potash Division*, is a properly balanced combination of *sulfate of potash* and *sulfate of magnesium*, both water-soluble and readily available to crops.

The use of a fertilizer containing *Sul-Po-Mag* is becoming popular with more profit-minded farmers every year. It's a sound farming practice that pays off in bigger yields, better quality and increased income.

potash division

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GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

A capsule review for ag leaders of the . . .

1955 Farm Outlook

By Edward Karpoff
*U. S. Department of Agriculture**

● AGRICULTURE'S MAJOR economic adjustments to the Korean truce came in 1954, and farmers' economic outlook for 1955 is mostly one of stability near current price levels for many important crops.

This is the summary of the economic outlook as given to 150 extension workers from the 48 states when they attended USDA's 32nd Annual Outlook Conference in Washington, D.C., October 25-29, 1954.

At meetings arranged jointly by the various services of USDA, the representatives from the states were told that demand conditions for farm output would be at least as good in 1955 as in the year just past. Maintained consumer incomes in the U.S., a larger domestic population, and probably increased exports were listed among the favorable factors which will influence 1955 prices.

Costs to be Steady

Cost rates or prices paid by farmers were also expected to hold steady in 1955. While individual prices will hold up, the total amount of farmers' expenses may be lower than in 1954, because output of some important crops may be smaller. Wheat and cotton acreages particularly will be down, since allotments for those crops are expected to be smaller.

Despite prospective lower acreages for both of those important crops, total agricultural output may be almost as large in 1955 as in 1954 if weather is normal. Farm output in 1954 was held down by widespread drought.

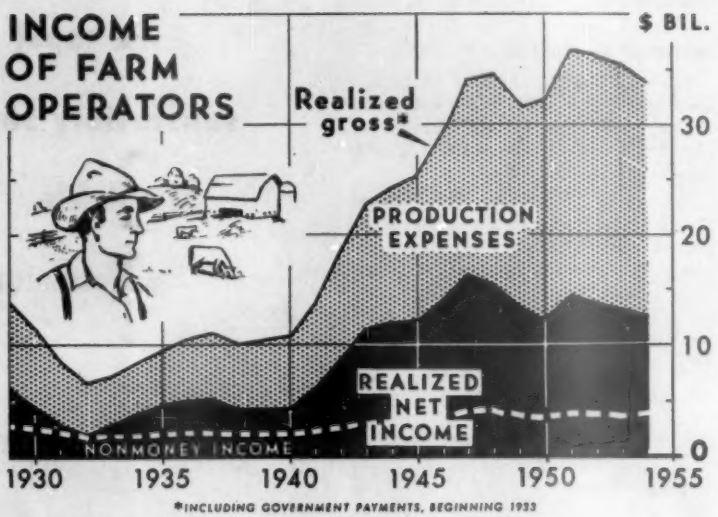
The net receipt of these factors is expected to be a slight decline in cash farm receipts from the 30 billion dollars estimated for 1954. Net farm income also is expected to decline slightly.

Migration Continues

On an average per capita basis, these prospective income changes may be more than offset by the continued migration of farm people to non-farm jobs. The resulting consolidation of farms results in the farm income being divided among a smaller farm population, with per person income actually rising.

In 1952-53, for example, the net change in farm population was a 6 percent decline, from 24.3 to 22.7 people. Such a rate of change in the farm population, if maintained, would considerably exceed the expected change in farm income.

The commodity highlights of the agricultural outlook are as follows.



UP OR DOWN . . .
Farm production steady, farm income a shade lower; farm costs steady.

Livestock and Meat

Farmers' prices for meat animals are likely to continue in 1955 at near the average price levels of late 1954. Somewhat increased pork supplies will accompany cattle and calf slaughter almost as large as this year, while demand will hold steady as a result of sustained consumer incomes.

The spring pig crop in 1955 probably will increase moderately over the 1954 level, but for the year as a whole the expected 2 to 5 per cent gain is not likely to depress prices below an average relation to the price of corn, assuming a normal corn crop in 1955. Under such circumstances, approximately average profits could be gained from pork production.

Dry weather in 1954 stimulated slaughter of beef cattle, and may have turned total numbers downward from the record of 94.7 million total cattle on January 1, 1954. By further slight reductions in the size of the U. S. cattle herd, total cattle slaughter in 1955 can be maintained at about the 1954 rate.

Sheep and lamb numbers in 1954 continued the down trend of recent years. A newly-announced wool price support program probably will make the sheep enterprise more favorable in situations where it competes with beef production.

Dairy Products

Milk production in 1955 is expected to about equal the 1954 record output of approximately 124 billion pounds, assuming that normal pastures will partly offset the relatively unfavorable milk-feed price ratios which will probably continue into 1955. The operation of mandatory price support programs will hold prices of manufactured dairy products close to the levels that have prevailed since April, 1954.

Eggs and Poultry

Supplies of eggs and poultry will continue large into 1955. Fewer replacement pullets will probably be raised in 1955, however, and by late summer the effects of a smaller flock should be apparent on egg production.

** While this article is prepared from data assembled by the Department of Agriculture, the interpretations are the author's.*

If a substantial reduction in flock replacement is apparent early next summer, egg prices are likely to show some seasonal price increase next fall, to an extent which did not occur in 1954.

Turkey production in 1955 may be reduced in response to the low prices received for the record-large 1954 crop, but broiler output may be kept at a high level due to widespread broiler financing practices which relieve many growers of some of the price risk.

Feeds

Despite the effect of drought on the corn crop, feed grain supplies per animal unit will be as large in 1954-55 as in the year before. Large carry-in-stocks, and large production of sorghums, oats, and barley offset the 7 per cent reduction in corn output. Hay supply, however, is below average in relation to the number of animals to be fed.

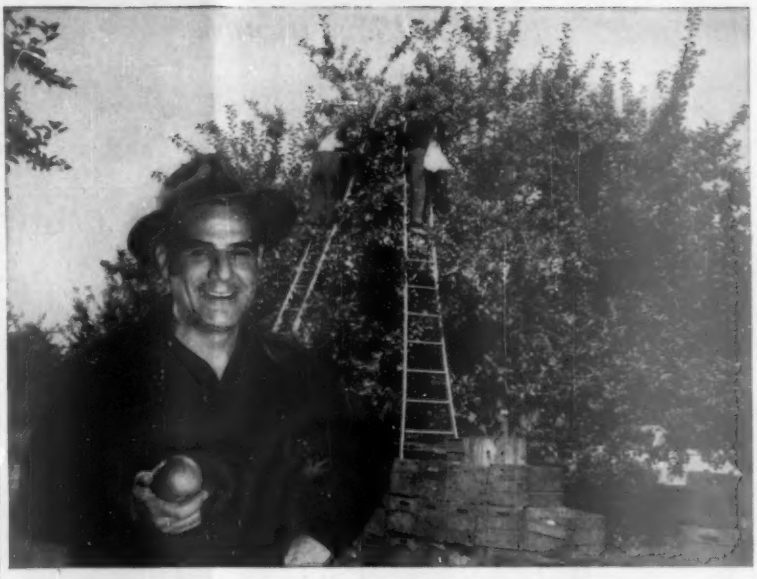
Because many farmers did not comply with their corn acreage allotments in 1954, prices of corn early in the feeding year were expected to be at or below year-earlier levels. But when the stocks of "free" corn are disposed of, prices may rise to the Government's loan rate or above, because some corn will have to be withdrawn from stocks if last year's feeding rates are to be maintained. Most of the carry-over stocks are subject to the Government's programs.

Wheat and Cotton

Average yields on the 1955 wheat acreage allotment would likely result in some reduction during the following year in the nation's carryover of that commodity. In 1954, the wheat carryover of 903 million bushels was almost as large as the year's crop, for which the preliminary estimate was 959 million bushels. The loan rate for 1955 wheat will be 82½ percent of parity, in accord with the flexible price support provisions of the Agricultural Act of 1954. The 1954 support was 90 per cent of parity.

The 1955 cotton acreage allotments have already been announced at levels intended to provide 10 million bales of upland cotton and 30 thousand bales of extra-long staple cotton, at average yields. Provisions of the Agricultural Act of 1954 point to a 90 per cent of parity support price, since a portion of the cotton carryover must be "set aside" for the support price determination.

Prospective domestic use and exports suggest that the carryover by August will be reduced below the 9.6 million bales of August, 1954.—*End*



"I've never grown a better crop"

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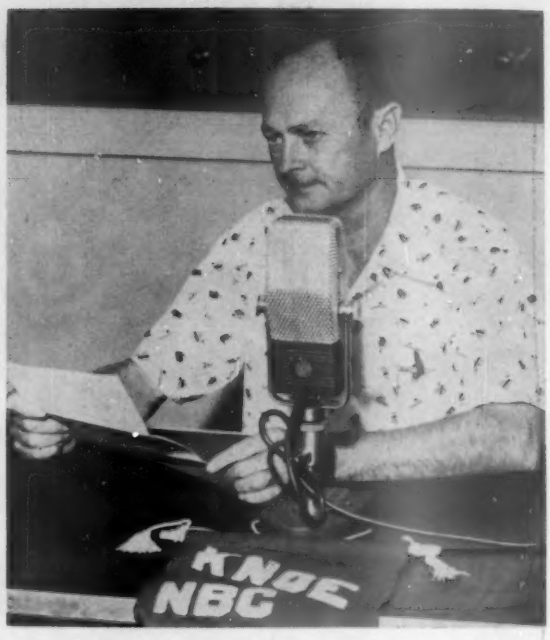
With radio, camera, and tape recorder . . .

Joyce Tells the Farmer's Story

By Frank Noonan



AG COMMENTATOR . . .
Each day he talks to farm people.

● AN ENERGETIC COUNTY agent with a Graflex camera and a tape recorder has played a notable role in helping tell the story of agriculture in Ouachita Parish, Louisiana.

He is J. J. Joyce, Jr., Monroe, who for the past 11 years has been traveling the highways and byways of Ouachita Parish advising farmers on agricultural problems. More recently he has employed the media of newspaper, radio, and television to dissiminate information throughout his district.

The sight of Joyce stalking through a pasture or cotton field in quest of a picture to convey an instructive message on some phase of farming, is familiar to many residents of the parish.

Joyce Uses Radio

His voice is also well known to many radio listeners through his daily five-minute tape recordings over Monroe radio station KNOE, which deals with a broad variety of agricultural subjects affecting the parish and northeast district.

When television came to Monroe in late summer of 1953, the veteran county agent, who started in extension work shortly after graduation from Louisiana State University in June, 1935, was ready to tackle the new medium.

Employing his talents as photographer and radio commentator in combination, he produced special events dealing with parish and regional agricultural activities over KNOE-TV, Monroe. And on several occasions he served as moderator when farm and business leaders were brought together for video panel discussions.

Perhaps Joyce's greatest recognition came as a result of his vivid photographic reports on crops and livestock which appeared on the farm pages of the Monroe Morning World and Monroe News-Star.

His venture in photography started in 1953. Using a camera and equipment furnished by the papers, he and I (as farm editor, Monroe News-Star —World newspapers) covered the parish in search of agricultural news. Joyce took the pictures and I wrote the stories.

Joyce was virtually the sole contributor when the farm pages of the two newspapers were started, but since that time, they have grown to the point where contributors are numbered in all 14 parishes of the Northeast district.

As a natural consequence, Joyce's photographic reporting of agricultural affairs inspired other county agents in the district to try their hand at the same thing. The trend has become quite noticeable.

This story was sent to Better Farming Methods by Jay Partridge, information chairman, National Association County Agricultural Agents. The story was written by Frank Noonan, farm editor, Monroe News-Star and Monroe Morning World.

It points up the excellent manner in which a county agent has publicized agriculture in his area. While following this program, he has not neglected his daily duties to his farm people in helping them achieve a better standard of farming.

The opportunity for better public relations programs with farm and city people is wide open. Perhaps some of County Agent Joyce's methods can be adapted and used in your locality.

Interviews Farmers

In his quest for radio material, Joyce's experiences are about as varied as they are in pursuit of newspaper photographs. He has made tape recordings—interviews with farmers and business men—from atop moving tractors in the field, on ferris wheels in motion, merry-go-rounds, in woods, barns, chicken houses, and in many homes.

When no standard electrical outlet is available, Joyce attaches a portable converter to the battery of a car or tractor and proceeds with his recordings.

Joyce's assistant, W. B. Aycock, associate county agent, takes over some of his daily broadcasts, and agents from adjoining or nearby parishes sometimes prepare tapes for use on his program. Each five-minute program is presented twice daily.

In all of his public relations work, the county agent tries to keep abreast of the times, giving hints on things that should be done currently, telling of advances in farming practices,

warning of outbreaks of disease or insect invasions, and suggesting practical control measures.

The assignment he follows is an unending one, but he works at it diligently, and agricultural interests in his area are better as a result.—*End*

★

C. M. Ferguson talked to the county agents at their recent national convention in Salt Lake City, Utah. It also gave him an opportunity to renew his acquaintance with E. O. Williams, president, NACAA. Williams is county agent in Toledo, O. Ferguson was formerly director of the Ohio state extension service.

★

Beef Cattle Need Protein

A four-year feeding trial with beef calves at Oklahoma A & M College showed that winter gain is directly related to the amount of protein in the supplement. Three groups of calves wintered in small traps and fed prairie hay, free-choice, plus one pound of supplement varying in percent protein (20, 30, and 40-percent) gained 11, 34, and 81 pounds, respectively.

Yearly gains, showing the same relationship to percent protein fed, were 250, 273, and 290 pounds, respectively.

★

"Conservation, you know! My pet turtle only needs half a worm!"

Why Laying Test Winners Choose 50-pound Multiwall Paper Feed Bags

Reports on laying test winners show that there's a trend to the use of 50-pound multiwall paper feed bags among leading poultrymen. Here's why three recent award-winners prefer this modern type of feed container.

"Much Easier to Carry"

"Paper feed bags are lighter . . . much easier to carry and empty—the feed also stays fresh longer."—*C. T. and C. K. Darby, Darby Leghorn Farm, Somerville, New Jersey, Winner, U. S. Official Laying Tests.*

"Help Sanitation"

"Now that I've used 50-pound multiwall paper feed bags, I wouldn't go back to any other kind. They empty out nicely into the hoppers—we have found that we can unload a truckload of 50's just as fast as 100's—and they help insure sanitation."—*Frank I. Hardy, C. Nelson Hardy and Son, Essex, Massachusetts. Rhode Island Reds, First, Rhode Island Test.* →

"Protect Feed Ingredients"

"A new paper feed bag that you know is clean is a positive factor in disease control—multiwall bags also protect feed ingredients in the warehouse—once my men have handled 50-pound bags, they hate to handle 100-pounders."—*H. A. Richards, Harco Orchards and Poultry Farm, Inc., South Easton, Mass., Barred Rocks and Rhode Island Reds. Second and Third, Rhode Island Test.*

Case histories supplied by Paper Shipping Sack Manufacturers Association, 370 Lexington Avenue, New York 17, N. Y.—*adv.*

Hints on how to use . . .

Visual Aids

By Gerald R. McKay
University of Minnesota

● THERE IS NOTHING really "new" about using visual aids as a teaching technique. Everywhere and at all times visual aids have helped impart knowledge, teach skills, and influence people. They make use of sight which is a more primitive means of learning than is speech or the written word. They have been found effective by teachers for hundreds of years.

What a man sees with his eyes, he remembers, and it is on this fact that the use of visual aids in agricultural work is based.

Flannelgraphs Are Useful Props

Several commercial concerns are now making flannelgraphs suitable for use in vo-ag and extension work. They can be made cheaply in the office, however, if the budget is a limiting factor. A flannelgraph should be part of the standard equipment of every agent and teacher.

Slide Titles are Easy to Make

Titles which become part of a color slide are effective and easy to make. A sensitized 2 x 2 glass with the title on it can be used as one of the cover glasses of the color transparency. The title must first be typed or hand lettered and then photographed with any ordinary 35 mm. film. From this negative it is printed on a sensitized cover glass which is used to cover one side of the transparency.

In making the negative, the camera must be far enough away from the title to make the lettering the desired size and also in the right location.

Film Splicer Will Pay for Itself

Have you a small 16 mm. film splicer? Virtually every extension agent and agriculture instructor now uses 16 mm. motion pictures. Usually films are sent to the agent or teacher in good physical condition but frequently a splice will pull apart or film break during projection. A small inexpensive splicer will make it possible to use the film again the next day. Without it, only temporary splices with some kind of adhesive tape can be made. These should not be run through a projector.

Use This Guide for Screen Size

What is the best size projection screen for extension workers? This question is asked many times each year and the answer can generally be based on two basic considerations.

First, it must be small enough to get in the back seat or trunk of an automobile. And second, it must be large enough to accommodate fairly large groups, perhaps 100 or more people.

A 52 inch wide screen can be put across most automobiles. Some might even accommodate one 60 inches across. A screen any smaller than this is not large enough for an audience of 100 people.

That just about answers the questions except for one thing. A square screen is more useful than one with greater width than height. It can be used with both horizontal and vertical 2 x 2 slides as well as motion pictures.

A projection screen should be small enough to fit in the back seat or trunk of a car but large enough to accommodate an audience of at least 100 people. A carrying case for the screen will pay for itself in longer wear for the screen.

Warm-Up a Cold Projector

In cold weather, warm up your projector before turning on the switch. Doing so may prevent burning out the motor while it is too cold to run. This also applies to tape recorders and other motor driven equipment.

Best thing is not to leave your equipment out in zero weather long enough to get thoroughly cold.

Beaded vs. Matte Screens—What Difference?

Is a "glass beaded" or "matte white" projection screen best for my purpose? This is a question which teachers and agents have asked many times. Without knowing the kind of room in which the screen will be used, the question can't be answered definitely.

A glass beaded screen will reflect more light back to the audience along a central perpendicular axis than will a matte white. The beaded screen will not, however, reflect this larger amount of light over a wide area.

In other words, beaded screens are most effective in long narrow rooms, while matte white ones are best in short wide rooms.

If the screen must be used in partially darkened rooms or with a low wattage projector, then a beaded screen might be best. The audience must be seated close to the axis perpendicular to the screen, of course.

With a high wattage projector and some control over light conditions a matte white one could be recommended.

Use Correct Type Flash Bulb

Make sure that you are using the right kind of flash bulb for your camera. And, see that your shutter is set to correspond with that bulb.

The October issue of Better Farming Methods carried an article by Ralph Mills of North Carolina State College entitled "Flash Photography is Easy." If you haven't already read it, better do it right now.

Once you know the right bulb and shutter setting for correct synchronization on your camera, you don't have to change or worry about different combinations.

Spoiled pictures almost surely will result from doing otherwise.

"Remember how you were always telling me to bring her home early?"

★

Weeds Hurt Soybeans

Moderate infestations of weeds, such as remain after normal cultivation operations, may cause a sizable reduction of soybean yield, according to a report by Iowa State College.

Soybeans kept weed-free have averaged three to five bushels more per acre than soybeans that were cultivated in a normal manner. That figure was based on average yield reductions in Iowa State College experiments over a period of four years.

Iowa research men have found also that grassy weeds in soybeans generally have caused less yield reduction than infestations of broadleaf weeds.

★

Name New 4-H Leader

Craig R. Montgomery, acting state 4-H club leader of North Dakota Agricultural College Extension Service since June 1, has received permanent appointment to the post by recent action of the State Board of Higher Education.

Montgomery succeeds the late Martin C. Altenburg to the 4-H leadership position. As 4-H leader, Montgomery will have general supervision of the statewide 4-H program of the Extension Service.

★

Plow—then Spray

According to workers at the University of Minnesota Experiment Station, land infested with Canadian thistles should be ploughed before being sprayed with 2, 4-D.

★

As a man gets older and wiser he talks less, but says more.

Tell poultry raisers about this modern vaccinating method

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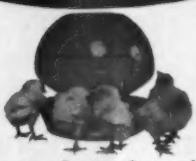

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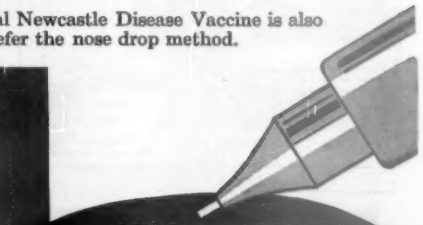

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Look over the Helpful Booklets—Page 33.

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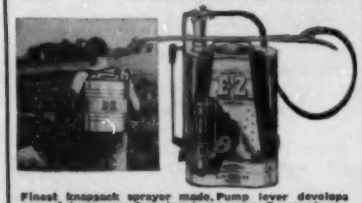

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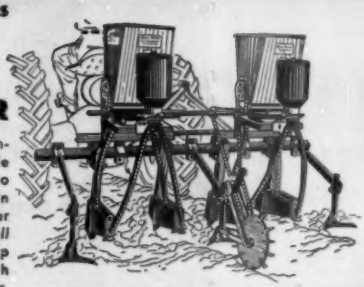

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Electric Fencing

Make It Safe!

By E. B. Rogers, Jr.
Clemson Agri. College

● FENCING WITH electricity has been, for several years now, quite a controversial issue. It is known that the electric fence is quite adaptable to many recommended farm practices, but yet several hundred livestock and a few people are killed each year by this device.

How can we, as agricultural leaders, be sure that we correctly advise farmers concerning the effective but safe use of these fences?

It has been my experience that the interest among vo-ag teachers and other agricultural workers in this subject is great, but unfortunately, knowledge is scarce. Frequently we, in farm electrification work, are asked, "How can I build a homemade electric fence?" The answer to such a question is, most emphatically, "There is NO way that the amateur electrician or mechanic can build a fence controller which is both effective and safe."

Shock Is Necessary

The use of electricity for controlling livestock is quite unique in principle. Normally, in electrical installations, we do everything possible to eliminate the shock hazard. In fencing with electricity we make use of this hazard. The problem, then, is to provide a shock severe enough to control animals but at the same time make it safe for both animals and humans.

The severity of the shock to living beings depends on three factors: Voltage; the current which flows; and the duration of time flow occurs. All three are very important to the proper operation of the electric fence.

In a properly designed controller the voltage is stepped up to from 300 to 1200 volts. This increased voltage is necessary to give suddeness or quick penetration to the shock.

The current flow in electric fences is measured and limited in terms of milliamperes (1 ma equals 1/1000 ampere). One milliampere is

about the smallest amount of current which can be felt by a human. About nine milliamperes is the maximum an adult male can safely stand continuously. This is considerably less for women and children.

At about 15 milliamperes a man could not release himself from the wire. Above this amount the danger of being killed becomes increasingly great if the current is continuous. Yet, we find, in order to effectively control livestock, we need a current flow of from 25 to 50 milliamperes.

How then can the fence be made both effective and safe? This can be done by interrupting the current flow. It has been generally conceded that a human or an animal can safely withstand a current flow of 25 milliamperes for one-tenth of a second provided there is an off period of nine-tenths of a second; or a current flow of 50 milliamperes for one-twentieth of a second with an off period of nineteen-twentieths of a second. Either of these, combined with the proper voltage, is sufficient to give a very penetrating shock and at the same time be safe.

Product Should Be Approved

There are three generally recognized organizations in the United States that set up very exacting standards governing electric fence controllers: Industrial Commission of Wisconsin; United States Bureau of Standards; and Underwriters' Laboratories, Inc. A fence controller approved by one or more of these organizations may be considered safe if used as recommended by the manufacturer and not tampered with.

Homemade controllers are of the continuous current type and are very dangerous. The use of light bulbs, old radio volume controls, etc., only serve to intensify the danger because it makes the farmer think that he has something which he doesn't have.

The following are points worthy of consideration.

1. Use only a fence controller approved by one of the recognized approving agencies for energizing electric fences.

2. Use controller only on power source and otherwise as recommended by the manufacturer.

3. Use signs on fence to properly identify it as an electric fence.

4. Do not use electric fences in an effort to control very vicious animals.

5. Use only one controller for a continuous fence. END

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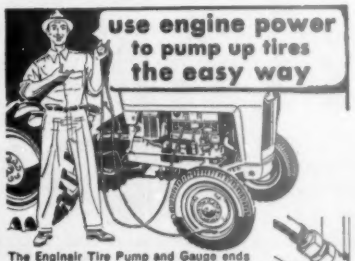

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Professional Magazine For Leaders Who Train and Advise Farmers

Published Exclusively for: County Agents, Vo-Ag Teachers, Extension Specialists, Soil Conservationists and Other Agricultural Leaders

SANDSTONE BUILDING, *Mount Morris, Ill.*

December 20, 1954

Dear Reader . . .

How come?

That query has been rephrased in many ways by our readers to ask the reason why we send you a copy of Better Farming Methods each month.

What is the purpose of the magazine? Why do we send it to you?

Its sole purpose is to help you. That is the only reason for its existence. Through the pages of Better Farming Methods each month we try to bring you information in the field of agriculture – ideas, methods, and techniques that will help you in your job. Many of these ideas and methods have been used by your co-workers, and all of them are intended to help increase the effectiveness and pleasure of your work.

Better Farming Methods is a professional magazine in the agricultural leader field. It is designed specifically to serve this particular branch in agriculture. You will find all the editorial content slanted toward your work. You can expect to find it edited toward your problems and your interests. It is written for you and in a large part by you – for no other group of agricultural people but you.

We send it to you because you qualify as an agricultural leader. The only people eligible to receive the magazine are leaders, such as yourself. We do not solicit subscriptions from any other field in agriculture. Only ag leaders receive it. The cost of sending it to you is supported by advertisements appearing in each issue.

This is YOUR magazine. From the specific feature stories in each issue dealing with successful methods as used by your co-workers, to the departments such as "Keeping Up in Agriculture" and "Washington News", to the four-page Helpful Booklet section where numerous commercial pamphlets and booklets are reviewed for your information, the entire magazine is devoted to helping you do a better job.

Our constant aim is to improve its value to you. There are two ways you can help. First, tell us from time to time how we might improve the magazine. Second, read the advertisements each month, and when writing companies, mention the fact you saw their ad in Better Farming Methods.

Leslie A. Watt

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